Report 11669
July 2000

AEROJET

Integrated Advanced Microwave Sounding Unit-A (AMSU-A)

Performance Verification Report

Final Comprehensive Performance Test Report, P/N 1331720-3-TST, S/N 109/A1

Contract No. NAS 5-32314
CDRL 208

Submitted to:

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Submitted by:

Aerojet
1100 West Hollyvale Street
Azusa, California 91702

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GENCORP
AEROJET

AE-26156/3C
6 April 1999

Superseding
AE-26156/3B
10 March 1999

PROCESS SPECIFICATION

METSAT/KLM/AMSU-A1, SYSTEM COMPREHENSIVE AND LIMITED PERFORMANCE TESTS TEST PROCEDURE

Contract No.: NAS5-32314

Prepared for:

NASA/Goddard Space Flight Center
Greenbelt Road
Greenbelt, MD 20771

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TEST DATA SHEETS

TEST DATA SHEETS (CONT)

1. SCOPE

1.1 *Scope*. This specification establishes the requirements for the Comprehensive Performance Test (CPT) and Limited Performance Test (LPT) of the Advanced Microwave Sounding Unit-A1 (AMSU-A1), referred to herein as the unit. The unit is defined on Drawing 1331720.

1.2 ***Test procedure sequence***. The sequence in which the several phases of this test procedure shall take place is shown in Figure 1, but the sequence can be in any order.

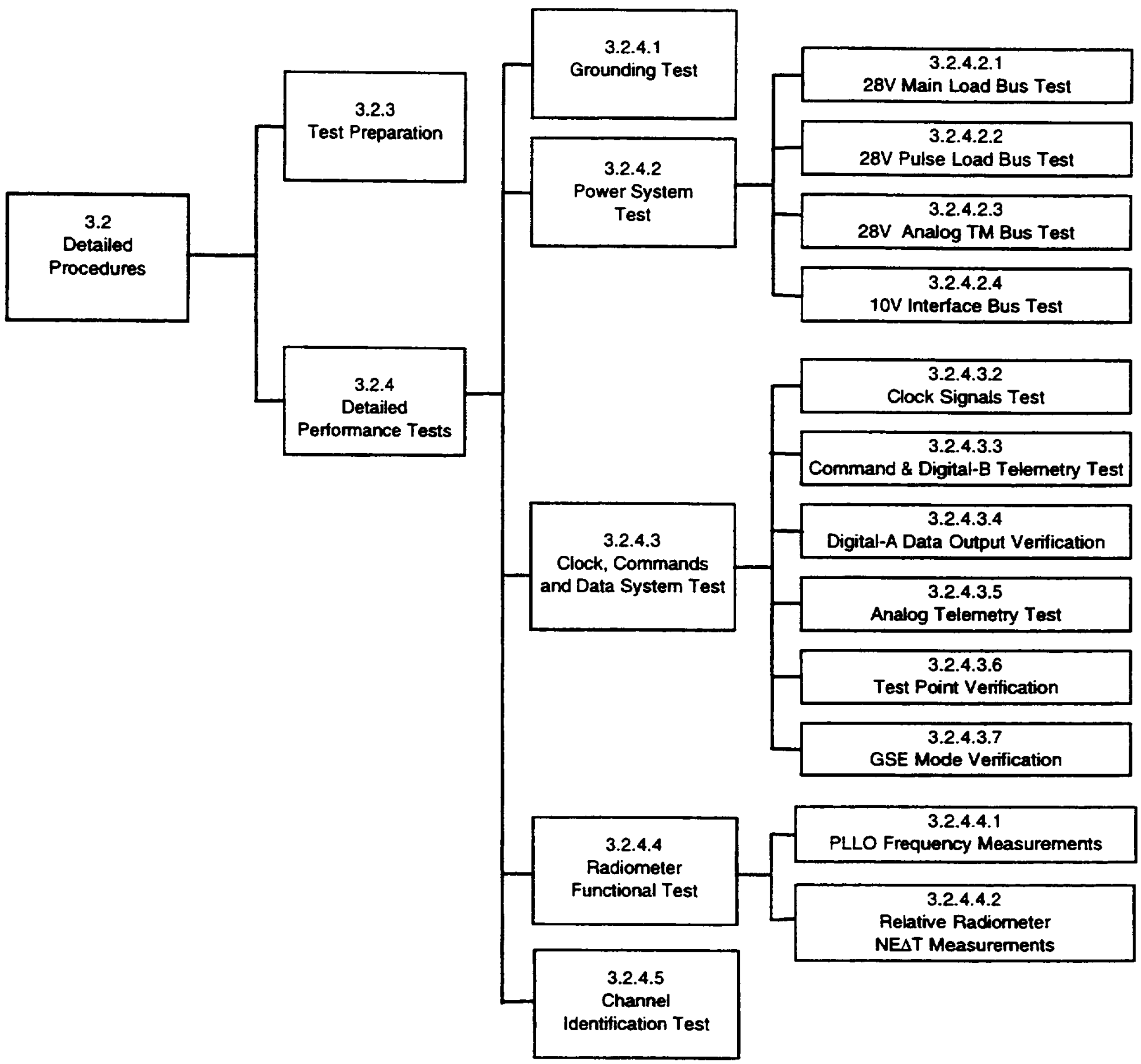

Figure 1. Test Procedure Sequence

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2. APPLICABLE DOCUMENTS

2.1 ***Government documents***. The following documents form a part of this specification to the extent specified. Unless otherwise specified, the issue shown shall apply.

STANDARDS

<u>Military</u>

MIL-STD-45662	Calibration Systems Requirements

OTHER DOCUMENTS

S-480-79	Performance Assurance Requirements for the EOS/METSAT Integrated Programs Advanced Microwave Sounding Unit-A (AMSU-A) (PAR)
S-480-80	Performance and Operation Specification for the EOS/METSAT Integrated Programs Advanced Microwave Sounding Unit-A (AMSU-A) (POS)
IS-2617547	AMSU-A1 Unique Instrument Interface Specification (UIIS)
IS-3267415	ATN-KLM General Instrument Interface Specification (GIIS)

(Copies of government documents should be obtained as indicated in the Department of Defense Index of Specification and Standards.)

2.2 ***Non-Government documents***. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issue in effect on the date of testing shall apply.

2.2.1 ***Aerojet documents***

SPECIFICATION

AE-26002/1	Test Procedure, Subsystem, Antenna Drive for AMSU-A1
AE-26151/5	Test Procedure, EMI/EMR & EMC for the METSAT/METOP Advanced Microwave Sounding Unit-A (AMSU-A)
AE-26157	Special Test Equipment (STE), Operation and Maintenance Manual
AE-26357	Transportation Handling Procedure for the AMSU-A System Integrated Program

STANDARD

STD-2454	Requirements for Electrostatic Discharge Control

REPORT

10353	Contamination Control Plan for the Advanced Microwave Sounding Unit-A (AMSU-A)

DRAWINGS

1331720	Advanced Microwave Sounding Unit A1 (AMSU-A1)
1335695	Special Test Equipment
1356655	Console Assembly, METSAT and EOS STE

(Copies of Aerojet documents may be obtained from Gencorp Aerojet, Azusa Operations, CAGE 70143, P.O. Box 296, Azusa, California, 91702-0296).

3. REQUIREMENTS

3.1 *General test requirements*

3.1.1 ***Equipment and test facilities***. The tests described herein shall be performed at Aerojet under laboratory conditions in an EMI shielded chamber for the first and final CPT. Other tests need not be accomplished in the EMI shielded chamber. The test equipment listed in Table I shall be used when performing the tests. If the specified equipment is not available, the equipment substituted shall provide a measurement accuracy equal to or greater than that of the specified equipment. The AMSU-A Special Test Equipment (STE) shall be used for activation and control of the unit and monitoring of its performance.

Table I. Equipment List

Item	Quantity	Item Description	Mfg.	Model
1	1	Dynamic signal analyzer	Hewlett-Packard	3562A
2	1	Signal Generator	Hewlett-Packard	3314A
3	1	Oscilloscope	Tektronix	2225A
4	1	9-pin breakout box	Aerojet	2536-3743/SK1358702-1
5	1	15-pin breakout box	Aerojet	2536-3744/SK1358703-1
6	2	25-pin breakout box	Aerojet	2336-3746/SK1358704-1
7	1	37-pin breakout box	Aerojet	2536-3745/SK1358705-1
8	1	Relay Board	Aerojet	–
9	1	Double Shielded Connector	–	–
10	1	Lab. General Purpose Power Supply	Hewlett-Packard	6114
11	1	Oscilloscope	Tektronix	466A
12	1	Power Supply	Power Designs	3650-S
13	1	WR19 Harmonic Mixer (40-60 GHz)	Hewlett-Packard	HP11970V
14	1	Power Meter	Anritsu	ML83A
15	1	WR19 Feed Horn	TRG	V861
16	1	LN2 Container	Cole	N03726-20
17	1	Spectrum Analyzer	Hewlett-Packard	8566B
18	1	STE Computer	Aerojet	1336695
19	1	STE Interface Cable J1	Aerojet	1335758-1
20	1	STE Interface Cable J2	Aerojet	1335752-1
21	1	STE Interface Cable J3	Aerojet	1335756-1
22	1	STE Interface Cable J4	Aerojet	1335755-1
23	1	STE Interface Cable J5	Aerojet	1335753-1
24	1	STE Interface Cable J6	Aerojet	1335754-1
25	1	STE Interface Cable J7	Aerojet	1335757-1
26	1	Oscilloscope Camera	Tektronix	–
27	1	Current Probe	Tektronix	AM503
28	1	Plotter	Hewlett-Packard	7475A
29	1	Frequency Counter	Hewlett-Packard	5316A
30	1	Multimeter (Digital volt-ohm meter)	Fluke	77

Table I. Equipment List (Continued)

Item	Quantity	Item Description	Mfg.	Model
31	1	Cold Target Stand A1-1	Aerojet	T-1291001-3
32	1	Cold Target Stand A1-2	Aerojet	T-1291001-2
33	2	Cold Target Support	Aerojet	T-1291000-1
34	1	Sweeper	Hewlett-Packard	83623A
35	1	Multiplier	Hewlett-Packard	83557A/83558A
36	1	Coupler/Detector	Hewlett-Packard	83557-60001
37	1	Spectrum Analyzer	Hewlett-Packard	8563E

3.1.2 ***Required procedures and operations***. The unit shall be subjected to the examinations and tests specified in 3.2.4 and Table II.

3.1.2.1 ***Limited performance test (LPT)***. The Limited Performance Test shall consist of the test procedures specified in the LPT column of Table II.

3.1.2.2 ***Comprehensive performance test (CPT)***. Three versions of the Comprehensive Performance Test are identified in Table II. These are applicable for different test stages. The test procedures to be performed for each version are specified in the 1st CPT, Sub CPT, and Final CPT columns of Table II. See 3.1.1 for required location of the first and the final CPT.

3.1.3 ***Inspection instructions***. The following shall apply to all inspections performed under this specification.

a. **Personnel familiarization**: All personnel directly concerned with the conduct of the inspection shall become familiar with the entire content of this document before beginning the tests. Each step, including all notes, warnings, and cautions, shall be understood thoroughly before starting.

b. **Referenced documents**: Performance of the tests specified herein may require reference to the documents listed in Section 2. It is recommended that the applicable issues of these documents be available at the time and place of testing.

3.1.4 ***Test conditions***. The following paragraphs shall apply to all testing described in this document.

3.1.4.1 ***Standard ambient conditions***. Unless otherwise specified in a detailed method paragraph, all handling shall be performed under the following laboratory ambient conditions.

a. Handling in accordance with AE-26357

b. Contamination control in accordance with Report 10353

c. Temperature: +23 ± 10°C

d. Pressure: 610 to 810 torr

e. Humidity: 50 ± 20% (no condensation)

f. The instrument shall be placed in its protective bag (1338427) when not in use.

Table II. AMSU-A1 Performance Tests

Paragraph	Test Description	1st CPT	LPT	Sub CPT	Final CPT
3.2.4.1	Grounding	X	X	X	X
3.2.4.2.1.1	+28 Main Load Bus (MLB) Turn-On Transient	X			X
3.2.4.2.1.2	+28 MLB Operating Power	X	Note 2	Note 3	X
3.2.4.2.1.3	Instrument Feedback Test	Note 8			
3.2.4.2.1.4	Transient Susceptibility Test	X			
3.2.4.2.2	+28 Pulse Load Bus (PLB) Peak Current	X		Note 4	X
3.2.4.2.2.8	Instrument Feedback Test (PLB)	Note 8			
3.2.4.2.2.9	Transient Susceptibility Test	X			
3.2.4.2.3	+28 Analog Telemetry Bus (ATB)	X		X	X
3.2.4.2.3.2	Instrument Feedback Test (ATB)	Note 8			
3.2.4.2.3.3	Transient Susceptibility Test	X			
3.2.4.2.4	+10 V Interface Bus	X		X	X
3.2.4.2.4.2	Instrument Feedback Test	Note 8			
3.2.4.2.5	Power Input Test for LPT		X		
3.2.4.3.2	Clock Signals	X			X
3.2.4.3.3	Commands and Digital-B Telemetry	X	X	X	X
3.2.4.3.4	Digital-A Data Output	X	Note 5	Note 5	X
3.2.4.3.5	Analog Telemetry	X	Note 6	Note 6	X
3.2.4.3.6	Test Points	X		X	X
3.2.4.3.7	GSE Mode	X Note 7			
3.2.4.4	Radiometer Functional	Title			
3.2.4.4.1	PLLO Frequency Measurement	X			X
3.2.4.4.2.2	Relative NEΔT	X	X	X	X
3.2.4.5	Channel Identification Test	X			

Notes:
1. Test Data Sheets for CPT/LPT located in Appendix A.
2. 3.2.4.2.5 (Power input test for LPT).
3. At 28 V only.
4. 3.2.4.2.2 except 3.2.4.2.2.6.
5. Only full scan.
6. STE only.
7. GSE mode test/verification is not required and is for engineering use only.
8. Instrument feedback test will be performed in the EMI/RFI chamber using EMI/RFI test procedure AE-26151/5.

3.1.4.2 ***Test tolerances***. The tolerances allowed on test conditions are intended only to provide for accuracy of such items as instrumentation and controls. Conditions shall be as close as possible to the nominal or center values specified, and in no instance shall they exceed the tolerances specified. Unless otherwise specified, the tolerances shall be within ± 10%.

3.1.4.3 ***Read-out accuracy***. Parameters are specified either as limits or as nominal values with plus-or-minus tolerances. These limits and tolerances shall be regarded as absolute, and the inaccuracies of measuring equipment shall not be interpreted as part of measured values in such a way that out-of-limit measurements may appear in-limit.

3.1.5 ***Electrostatic Sensitive Device (ESD) handling.*** All electronic hardware shall be handled in accordance with Aerojet Standard STD-2454.

3.2 ***Detailed Procedures***

3.2.1 ***Responsibility for inspection.*** All tests specified herein shall be performed under the cognizance of Aerojet Quality Assurance.

3.2.2 ***Monitoring procedures for equipment.*** Test equipment calibration schedules and procedures shall comply with the requirements of MIL-STD-45662. Before performing examinations and tests in accordance with this procedure, all test equipment to be used shall be verified as being within their current calibration period. Calibration or alignment, necessary for operation of the equipment within the requirements of this document, shall be performed when required.

3.2.3 ***Test preparation***

3.2.3.1 ***STE connection.*** The power sources, signal sources, and loads are provided to the unit under test by the AMSU-A Special Test Equipment (STE) (Drawing 1335695 or 1356655), in accordance with paragraph 5.2 of S-480-80. The STE is automated test equipment controlled by a MicroVax computer. The unit shall be connected to the STE in accordance with AE-26157 and the detailed test procedures in 3.2.4.

3.2.3.2 ***Signal sources.*** Signal sources required during the performance test but not provided by the STE are as follows:

a. Cold background at LN_2 temperature at room ambient.

b. +28 ± 1 Vdc, 3 Amps.

3.2.3.3 ***Signal outputs.*** Signal outputs, except for the test signals at J7, shall be monitored by the STE. The signal outputs at J7 are shown in Figure 2.

3.2.3.4 ***Test software.*** AMSU-A1 bonded software shall be used to operate the STE. During initialization of the STE, as specified in AE-26157, the A1 software shall be selected. The bonded software is being selected by the STE computer automatically during initialization of the STE.

3.2.3.5 ***Initial turn-on.*** When called for in the individual test procedures, turn on the unit as follows:

1. Turn on the STE and initialize the STE as specified in AE-26157.

2. Connect breakout box to J1 on the STE +28 V power supply cable J1.

3. Connect DVM to J1-1 (+) and J1-3 (RTN).

4. Verify that the STE power supply POWER switch on the STE +28 V power supply is ON and the power supply is adjusted to +28 ±0.5 Vdc.

5. Verify that the PWR and SW/TM switches on the STE power distribution unit are ON.

6. Enter the serial number (decimal equivalent of the identification number provided in the UIIS) for the unit under test using AE-26157, if necessary. Verify that the Main Menu (AMSU-A1 WHAT TYPE OF TEST?) is displayed on the STE CRT terminal display.

7. On the Main Menu, press the [2] MONITOR ONLY touch area (or type the number). The Monitor Only Menu will be displayed, with Block Monitor Data Select options shown in the middle (window) area of the screen.

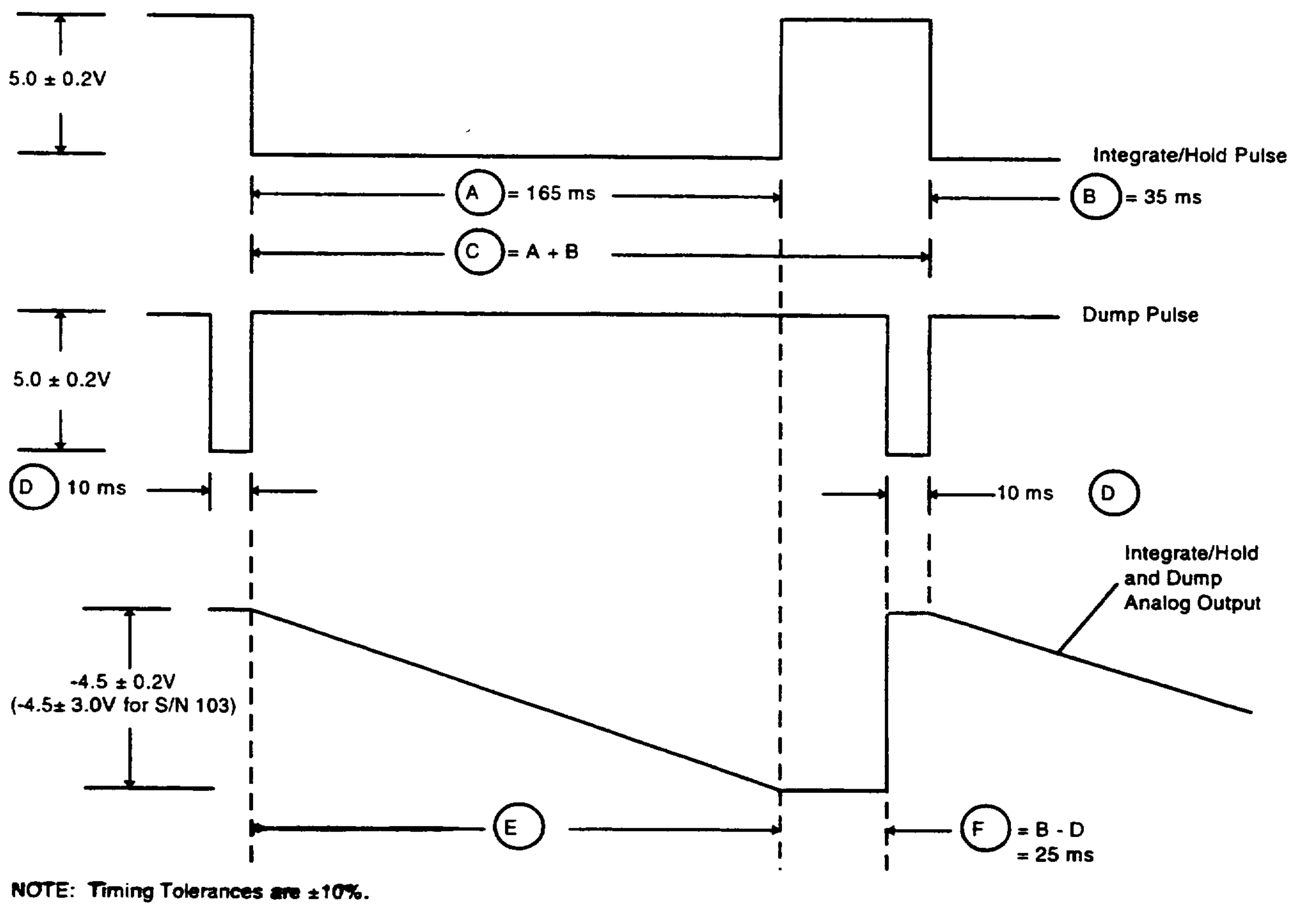


Figure 2. Signal Output at J7

8. On the Monitor Only Menu, press [14] COMMANDS. The Commands Menu will be displayed in the window area.

9. On the Commands Menu, press [9] MODULE POWER = CONNECT. Wait at least 18 seconds for command execution. This applies power to the unit.

10. Execute commands as necessary to obtain the following configuration:

COMMANDS					
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	YES	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

11. Wait at least 18 seconds and observe the commands are acknowledged by STE.

12. Verify that the STE power supply is adjusted to +28 ±0.5 Vdc (see steps 2 through 4) .

13. Verify that all breakout box switches are in the closed position.

14. According to the individual test procedures, execute commands as necessary to obtain the required commands configuration. Several commands can be executed at the same time.

3.2.3.6 ***Turn-off methods***. The unit can be turned off immediately by pressing [9] MODULE POWER = DISCONNECT on the Commands Menu. For a phased shutdown, press [11] MODULE TOTALLY OFF = OFF on the Commands Menu or press POWER [4] OFF on any display. When connecting breakout boxes to the unit or STE connectors, verify that the unit power is off and the STE +28 V power supply is manually turned off.

NOTE

If power of the unit is turned off by command [9] MODULE POWER = DISCONNECT or the STE program is interrupted, then perform a phased shutdown after turn-on before starting next step.

3.2.4 ***Detailed performance tests***. The comprehensive performance tests for the AMSU-A1 system are to be carried out on the fully assembled and operational unit. The tests to be performed are as follows:

a. Grounding/Isolation system test.

b. Power system test.

c. Clock commands and data system test.

d. Radiometer functional test.

e. Transient susceptibility test.

f. Instrument feedback test.

3.2.4.1 ***Grounding test***. This test provides the verification of the unit grounding requirements of GIIS IS-3267415 Paragraph 3.1.1 and UIIS IS-2617547 paragraph 3.1.1.

1. Connect breakout boxes to each of the spacecraft interface connectors J1 through J7 as shown in Figure 3. Verify that all connectors are protected with connector savers.

2. Measure and record continuity or isolation between the points shown on Test Data Sheet (TDS) 1.

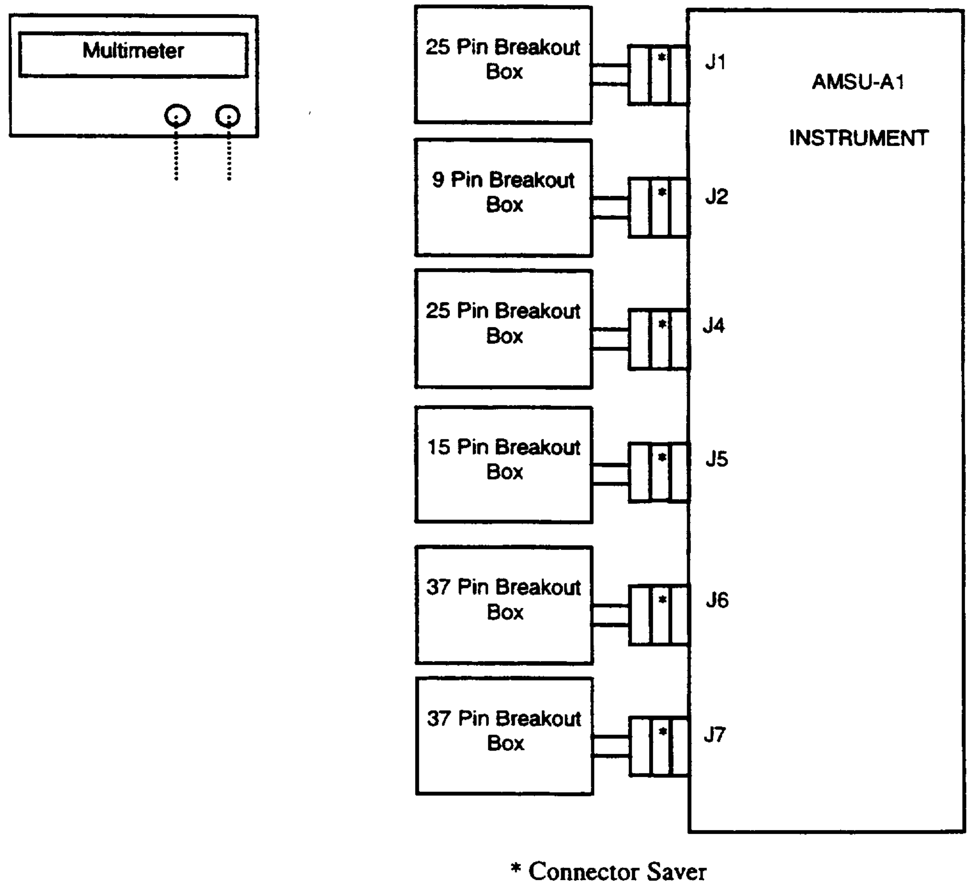


Figure 3. Grounding Test Setup

3.2.4.2 ***Power system, transient susceptibility, power quality, and instrument feedback tests***. The purpose of these tests is to verify power system compliance in regard to:

a. Turn-On transients

b. Operating power

c. Transient susceptibility

d. Current ripple

The following DC voltage lines will be tested for the above parameters:

a. +28 V Main Load Bus (parameters a, b, c, d)

b. +28 V Pulse Load Bus (parameters a, b, c, d)

c. +28 V Analog Telemetry Bus (parameters b, c, d)

d. +10 V Interface Bus (parameters b, d)

3.2.4.2.1 ***+28 V main load bus test***

3.2.4.2.1.1 ***+28 V MLB during turn on transient.*** The +28 V MLB (at 28.56 Vdc) during turn on, shall be verified as follows:

1. Configure the unit and test equipment as shown in Figure 4. Obtain DSA trigger from J4-14. Verify that switches 1, 2, 14 and 15 of the breakout box are in the OPEN position. Disconnect +28 Vdc external power supply output at J1 and adjust the power supply to read 28.56 ± 0.05 Vdc on voltmeter. Re-connect the power supply output (J1) as shown in Figure 4.

2. Configure the Dynamic Signal Analyzer (DSA) as follows:

Select **MEAS MODE**
    Select *Time Capture*
    Select *Capture Select*
    Select *Capture Length*; Enter *300.0*; Select *msec*
Select **FREQ**
    Select E SMPL *Off*
    Select *Freq Span*; Enter *25*; Select *kHz*
Select **SELECT MEAS**
    Select *Power Spec*
    Select *CH1 Active*
Select **WINDOW**
    Select *Hann*
Select **SOURCE**
    Select *Source Off*
Select **AVG**
    Select *Avg Off*
    Select *Tim Av Off*
Select ***RANGE***
    Select *Chan 1 Range;* Enter *1;* Select *V*
Select **INPUT COUPLE**
    Select *CH1 DC*
    Select *CH1 Ground*
Select **INPUT TRIG**
    Select *Trig Level;* Enter *100;* Select *mV*
    Select *Arm AU*
    Select *Ext;* Select *(-) Slope*
Select **TRIG DELAY**
    Enter *0;* Select *µSec*
Select **COORD**
    Select *Real*
Select **VIEW INPUT**
    Select *Time Buff*
Select **SCALE**
    Select *X Fixd Scale:* Enter *0.0, 300;* Select *msec*
    Select *Y Fixd Scale*; Enter *0,80;* Select *mV*
Select **UNITS**
    Select *Hz (sec)*

NOTE

Prior to collecting any current data, the current meter and DSA have to be "zeroed out"; zero current reference has to be established on the DSA. Follow this interim procedure to zero reference the current meter and DSA.

a) Select 1.0 A/10mV per div. on the current amplifier.

b) Remove the current probe from the circuit and close the probe. Place the probe in a magnetic benign location.

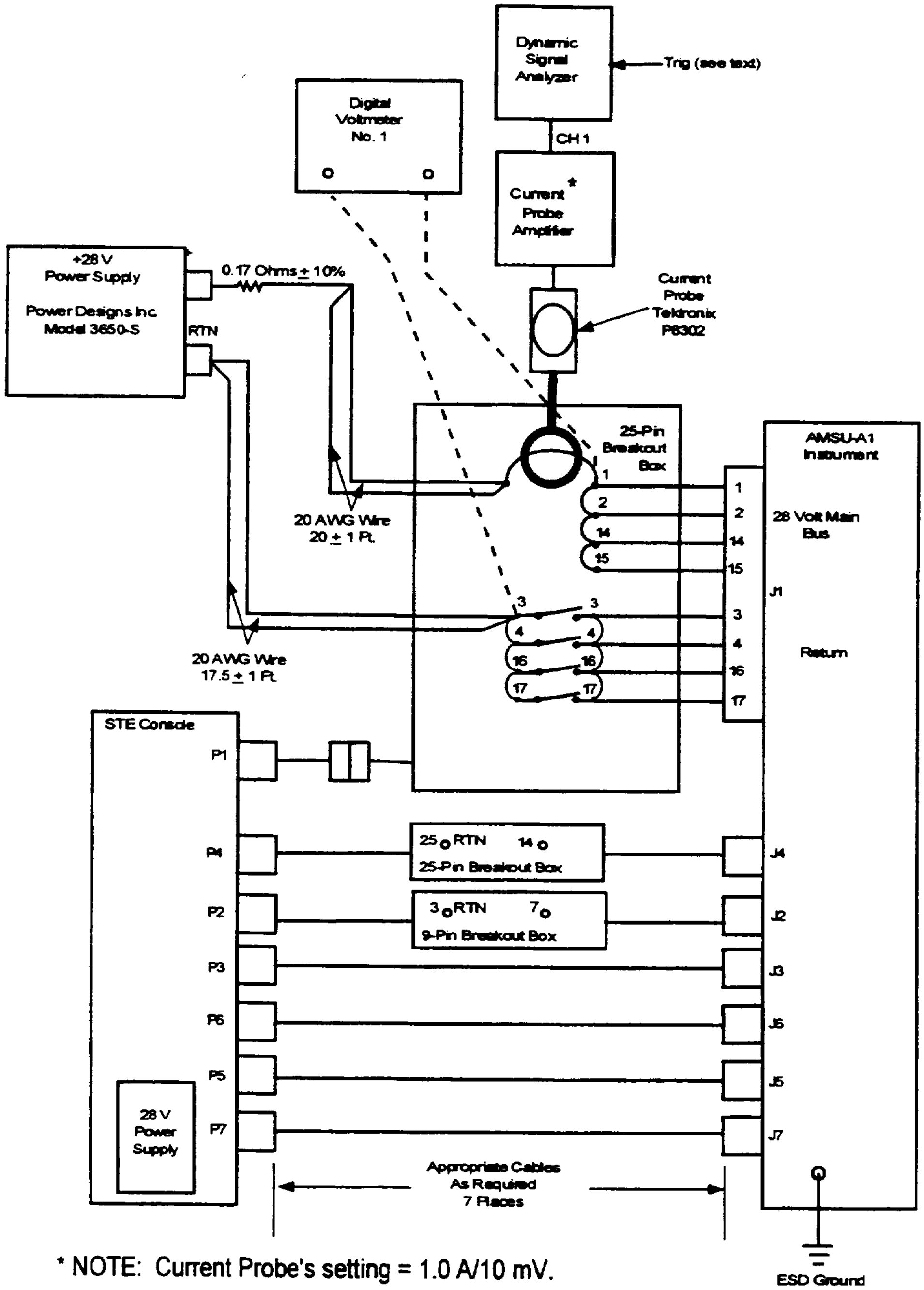
c) Adjust the "y" axis voltage range to ±4 mV.

d) Place the DSA in "Free Run" Trigger and depress "Start Capture" on the DSA.

e) With the "capture in process", adjust the "output DC level" control on the current amplifier to indicate zero current on the DSA.

f) Position the current probe to its original location in accordance with Figure 4, and return the DSA to "Ext" trigger.

3. Turn the unit ON by selecting [9] MODULE POWER; set up the operating modes as defined in paragraph 3.2.3.5 (reference the command screen parameters below). If necessary, adjust the external power supply for 28 Vdc.



* NOTE: Current Probe's setting = 1.0 A/10 mV.

Figure 4. +28 V Main Load Bus Verification Setup

COMMANDS			
[9] MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO [15]
[10] SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO [16]
[11] MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	YES [17]
[12] SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1 [18]
[13] SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO [19]
[14] ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO [20]
POWER [4] ON			

4. Turn the unit OFF by executing command [9] MODULE POWER. Confirm the command has bee executed on the STE display.

5. Start the DSA signal capture by depressing "Start Capture"; wait for the DSA message "waiting for trigger" before proceeding.

6. On the STE computer, select [9] MODULE POWER and obtain a record of the +28 MLB Turn-On curren waveform. On the STE computer, select [9] MODULE POWER to turn the instrument's power OFF Adjust the display time base and voltage sensitivity to allow for adequate current and pulse duratior measurements (refer to Figure 5 or Figure 6 for an example of per division values). Plot the obtainec waveform and attach a hard copy of the scan to TDS 2.

7. Measure the Turn-On time to reach steady state current; record this value on TDS 2.

8. Compute the peak current as follows:

   Measure the maximum Y value by the current/div as selected on the current amplifier. As an example, if the current amplifier is set up to display 1.0 A/10 mV per division, and the maximum Y value = 46.8 mV:

   $$46.8 \text{ mV} \times (1.0 \text{ A}/10 \text{ mV}) = 4.68 \text{ amps}$$

   Record this value on TDS 2.

9. The 1st derivative of the current waveform must be calculated. Compute the dI/dT as follows:

   The most probable location of the greatest current demand is during the first positive transition after voltage application. If this is the case, expand that segment of the display and measure the greatest voltage transition in the smallest time transition. The change in voltage times the current/div as selected on the current amplifier produces the change in current. Next divide this change in current by the change in time (in microseconds). This value is dI/dT. Example:

   Change in voltage .... 35.29 mV
   Change in time (microseconds)............ 31.25 µs
   Current/div on current amplifier .... 1000 mA/10 mV

   $$35.29 \text{ mV} \times (1000 \text{ mA}/10 \text{ mV})/31.25\ \mu\text{s} = 112.9 \text{ mA}/\mu\text{s}$$

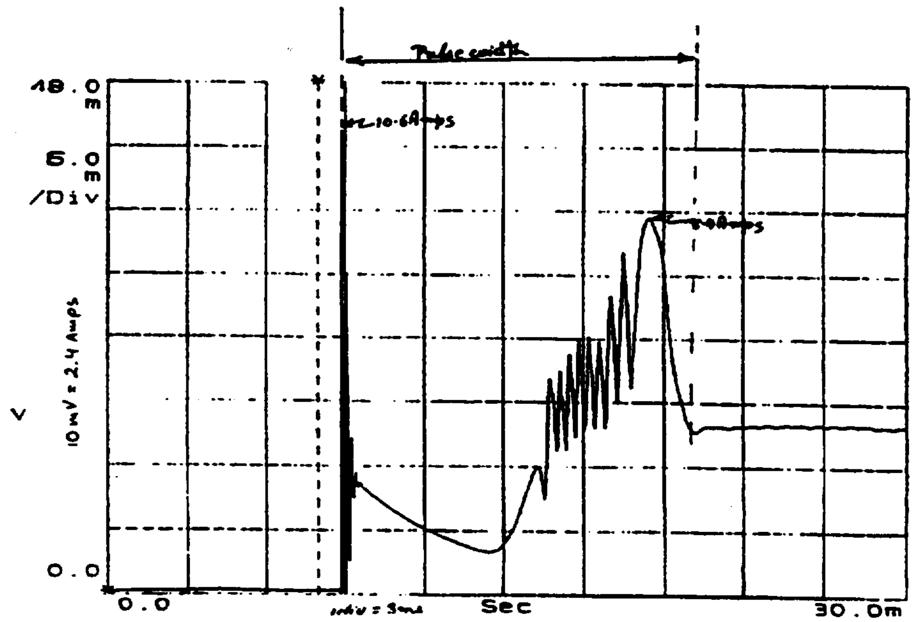
10. Record the computed value on TDS 2.

11. With the multimeter, adjust the external power supply to 27.44 ±0.05 Vdc as measured between J1-1 (high) and J1-3 (low).

12. Repeat steps 3 through 10.

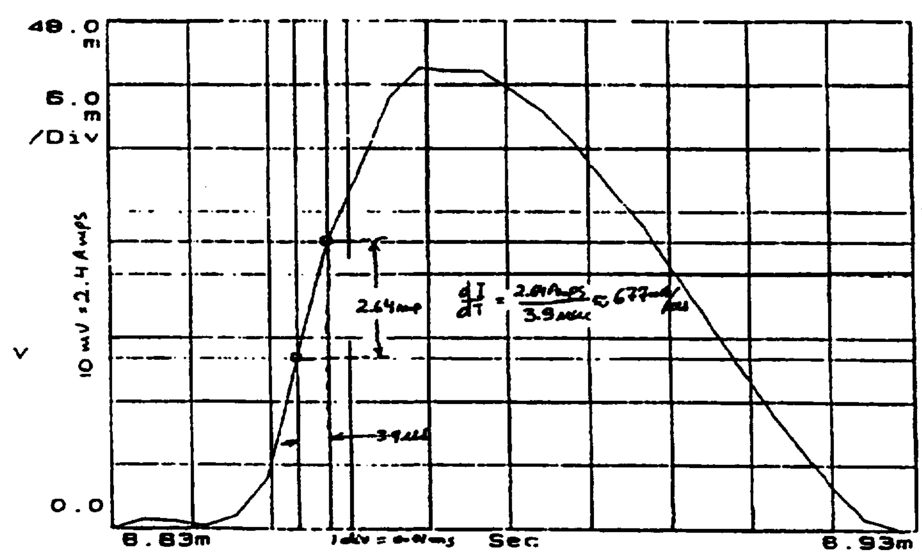
13. With the multimeter, adjust the external power supply to 28.00 ±0.05 Vdc as measured between J1-1 (high) and J1-3 (low).

14. Repeat steps 3 through 10.



10 mV = 2.4 Amps

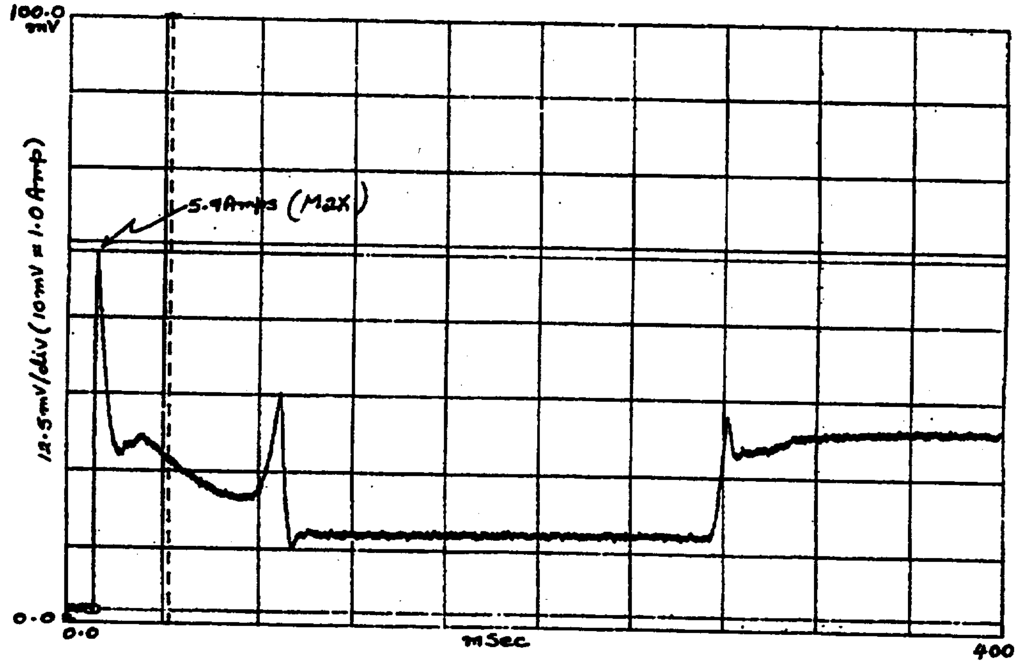
AMSU-A1 (S/N 102) Main Load Bus Worst Case Transient



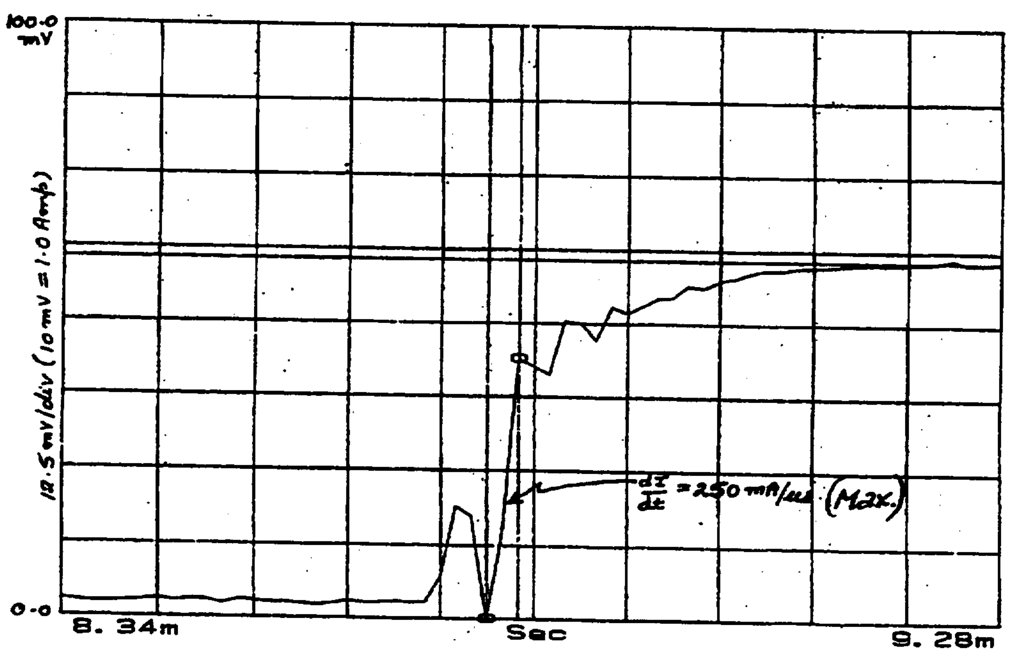
10 mV = 2.4 Amps

AMSU-A1 (S/N 102) Main Load Bus $\frac{dI}{dT}$ at Worst Case Transient

Figure 5. +28 V Main Bus Load Peak Power for KLM (S/N 102, 103 and 104)



AMSU-A1 Main Load Bus Worst Case Turn-on Transient



AMSU-A1 Main Load Bus $\frac{dI}{dT}$ at Worst Case Turn-on Transient

Figure 6. +28 V Main Bus Load Peak Power for METSAT (S/N 105 and up)

3.2.4.2.1.2 ***+28 V MLB operating power.*** Measure the steady state current, voltage, and power as follows:

1. Configure the unit and test equipment as shown in Figure 4. Verify that switches 1, 2, 14 and 15 of the breakout box are in the OPEN position.
2. Turn off power supplies. Insert current meter in positive lead of external power supply, turn power supplies on. Place the unit in operating condition as described in 3.2.4.2.1.1, step 3. While monitoring voltmeter No. 1, adjust the external power supply to 27.0 ± 0.1 volts (see Figure 4). Record the voltage displayed on voltmeter No. 1 on TDS 3 (MLB voltage at 27 Vdc).
3. Record the operating current on TDS 3.
4. Compute the operating power (in watts) as explained on TDS 3.
5. Execute command [18] PLL POWER to change from PLLO#1 to PLLO#2. Allow the instrument to stabilize for a minimum of two minutes.
6. Record the operating current on TDS 3.
7. Compute the operating power (in watts) as explained on TDS 3.
8. Execute command [18] PLL POWER to change from PLLO#2 to PLLO#1. Allow the instrument to stabilize for a minimum of two minutes.
9. Adjust the external power supply to 28.0 ± 0.1 Vdc and record voltage on TDS 3.
10. Record the operating current on TDS 3.
11. Compute the operating power (in watts) as explained on TDS 3.
12. Execute command [18] PLL POWER to change from PLLO#1 to PLLO#2. Allow the instrument to stabilize for a minimum of two minutes.
13. Record the operating current on TDS 3.
14. Compute the operating power (in watts) as explained on TDS 3.
15. Execute command [18] PLL POWER to change from PLLO#2 to PLLO#1. Allow the instrument to stabilize for a minimum of two minutes.
16. Adjust the external power supply to 29.0 ± 0.1 Vdc and record voltage on TDS 3.
17. Record the operating current on TDS 3.
18. Compute the operating power (in watts) as explained on TDS 3.
19. Execute command [18] PLL POWER to change from PLLO#1 to PLLO#2. Allow the instrument to stabilize for a minimum of two minutes.
20. Record the operating current on TDS 3.
21. Compute the operating power (in watts) as explained on TDS 3.
22. Execute command [18] PLL POWER to change from PLLO#2 to PLLO#1. Allow the instrument to stabilize for a minimum of two minutes.

23. Adjust the external power supply to 28.0 ± 0.5 Vdc.

24. Turn the unit off by executing [9] MODULE POWER = DISCONNECT.

3.2.4.2.1.3 ***Instrument feedback test***. Instrument feedback test will be performed in the EMI/RFI chamber using EMI/RFI test procedure AE-26151/5.

3.2.4.2.1.4 ***Transient susceptibility and power quality tests***. The power tests that follow will demonstrate the AMSU-A1 instrument will operate within specified parameters when the transients (low and high frequency) are applied directly to the power lines.

3.2.4.2.1.4.1 ***Equipment setup***. Set up the test equipment and connect to the instrument as shown in Figure 7.

3.2.4.2.1.4.2 ***Low frequency load induced transients***. The AMSU instrument shall be capable of normal operation before and after positive and negative transients are injected into the power line at the amplitude and duration specified in Figure 8. Perform the Low Frequency Load Induced Transients test as follows:

1. With the exception of the external power supply, turn ON all the test equipment.

2. Place the signal generator in ARB 0 mode. With the external power supply OFF, while monitoring the oscilloscope, adjust the amplitude and frequency output of the signal generator to attain the signal characteristics as shown in Figure 8.

3. Remove the signal generator output connection from the power supply. While monitoring the external power supply dc voltage with the meter, turn the external power supply ON.

4. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.

5. Acquire one Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22. Attach printouts to TDS 51.

6. Connect the signal generator to the external power supply. Wait for the instrument to complete three scans. Remove the signal generator output from the power supply.

7. Acquire one Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22. Attach printouts to TDS 51.

8. Record any deviations in the functional performance of the AMSU instrument on TDS 51.

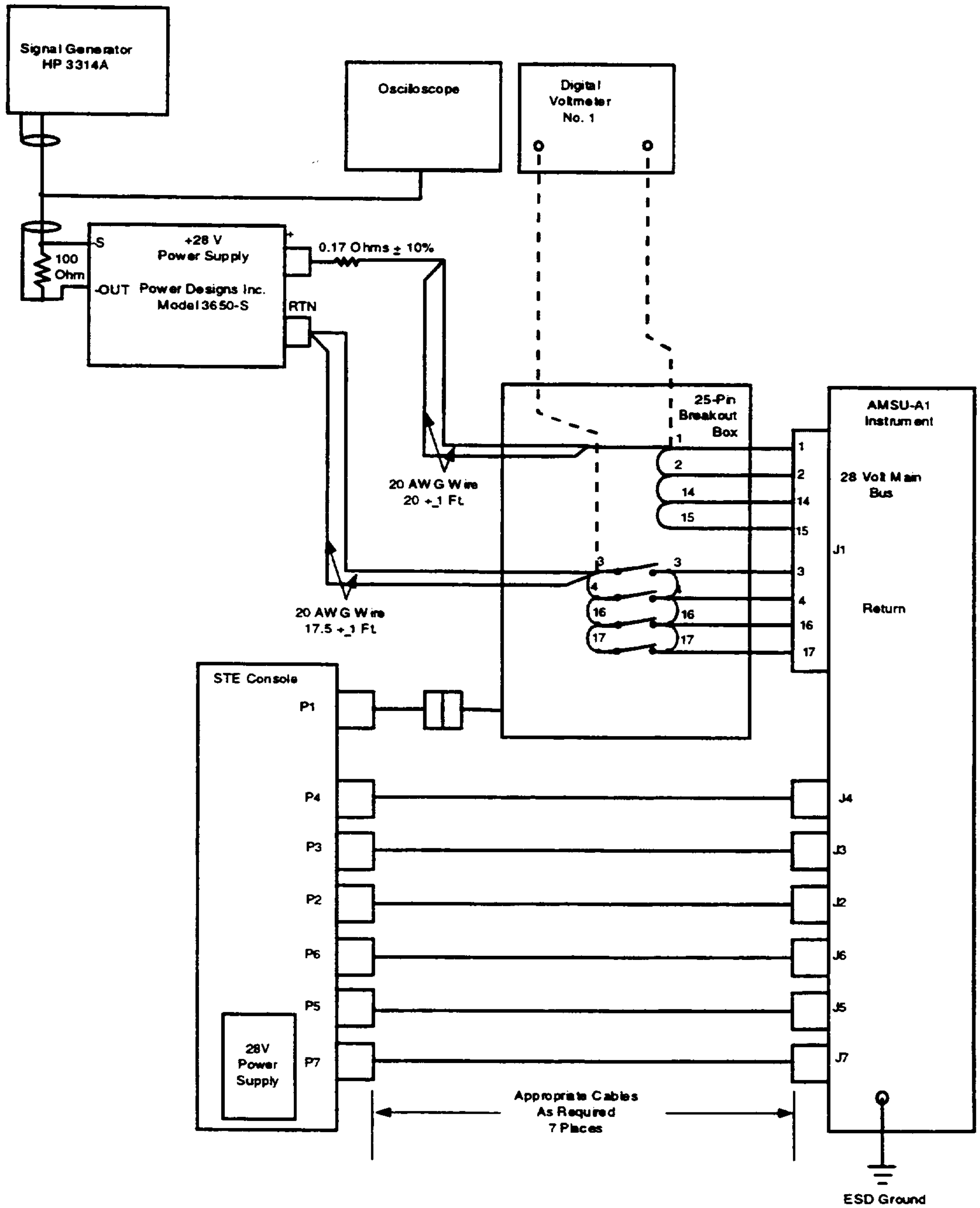


Figure 7. +28 V MLB Transient Susceptibility and Power Quality Tests Setup

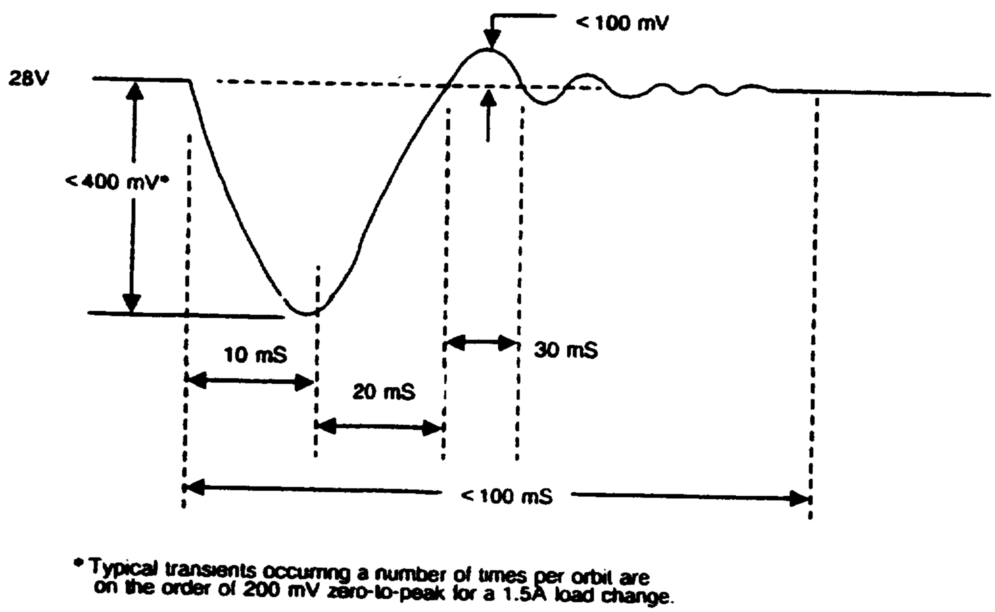


Figure 8. Load Induced Transient (Main Bus)

3.2.4.2.1.4.3 ***High frequency load induced transients*****.** The AMSU instrument shall be capable of normal operation before and after positive and negative transients are injected into the power line. The interfering frequencies are simulated by using the triangular wave output of the signal generator. There are three signals to be sequentially injected; the frequencies and amplitudes as produced by the signal generator and measured by the oscilloscope are:

Frequency (Hz)	Amplitude
1.43	200 mVpp
2.86	1.00 Vpp
6.67	1.50 Vpp

Tolerance on the above values is ±10%.

Perform High Frequency Load Induced Transients as follows:

1. With the exception of the external power supply, turn ON all the test equipment.

2. With the external power supply OFF, while monitoring the oscilloscope, adjust the amplitude and frequency output of the signal generator output as follows:

   amplitude .... 200 mVpp
   offset .... 0.000 V
   frequency .... 1.430 Hz

3. Remove the signal generator output connection from the power supply. While monitoring the external power supply dc voltage with the meter, turn the external power supply ON.

4. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.

5. Acquire one Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22.

6. Connect the signal generator to the external power supply. Wait for the instrument to complete three scans. Remove the signal generator output from the power supply.

7. Acquire one Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22.

8. Repeat steps 2-4 and 6-7 for 2.86 Hz and 1.0 Vpp.

9. Repeat steps 2-4 and 6-7 for 6.67 Hz and 1.5 Vpp.

10. Record any deviations in the functional performance of the AMSU instrument on TDS 51.

3.2.4.2.2 ***+28 V pulse load bus test***

3.2.4.2.2.1 ***PLB during the first two seconds*****.** The PLB operation, during the first two seconds, shall be verified as follows:

1. Configure the unit and test equipment as indicated in Figure 9. Obtain DSA trigger from J2-7. Verify that switches 5, 6, 18 and 19 of the breakout box are in the OPEN position.

2. Disconnect +28 Vdc external power supply output and adjust the power supply to read 28.00 ± 0.05 Vdc by using DVM. Re-connect power supply output as shown in Figure 9.

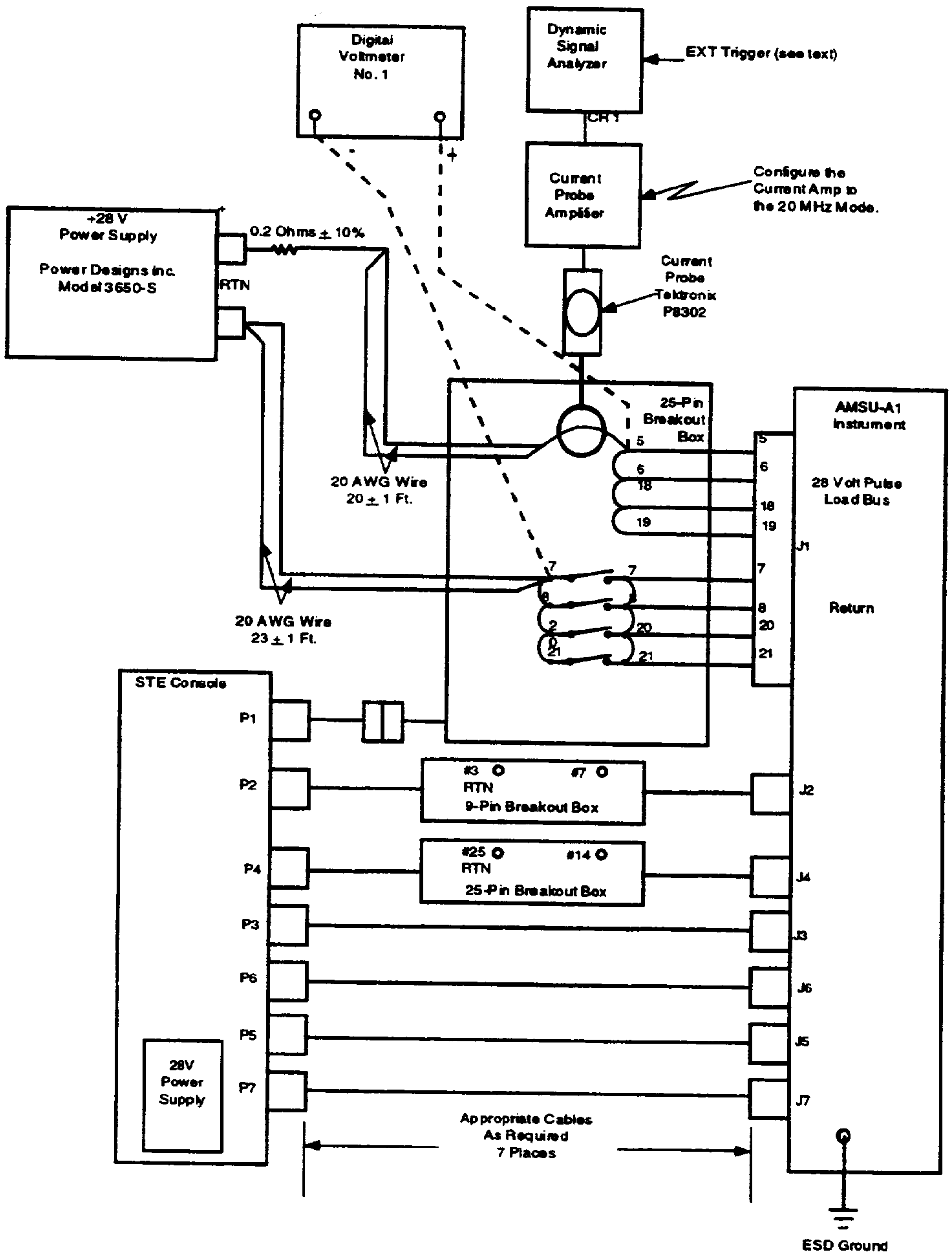


Figure 9. +28 V Pulse Load Verification Setup

3. Configure the dynamic signal analyzer as follows:

Select **MEAS MODE**
- Select *Time Capture*
- Select *Capture Select*
- Select *Capture Length*; Enter *1*; Select *Record*

Select **FREQ**
- Select *Freq Span;* Enter *100*; Select *Hz*
- Select E SMPL *Off*
- Select *Time Length*; Enter *8.0*; Select *Sec*

Select **SELECT MEAS**
- Select *Power Spec*
- Select CH1 *Active*

Select **WINDOW**
- Select *Hann*

Select **SOURCE**
- Select Source *Off*

Select **AVG**
- Select Avg *Off*
- Select Tim Av *Off*

Select ***RANGE***
- Select *Aut 1 Rng up*

Select **INPUT COUPLE**
- Select *CH1 DC*
- Select *CH1 Ground*

Select **INPUT TRIG**
- Select *Trig Level;* Enter *1.5;* Select *V*
- Select *Arm AU*
- Select *Ext*
- Select *Slope -*

Select **TRIG DELAY**
- Enter 0.0; Select *Sec*

Select **COORD**
- Select *Real*

Select **VIEW INPUT**
- Select *Time Buff*

Select **SCALE**
- Select *X Fixd Scale:* Enter *0.0, 8.0;* Select *Sec*
- Select *Y Fixd Scale*; Enter *-10.0, 70.0;* Select *mV*

Select **UNITS**
- Select *Hz (sec)*

NOTE

Prior to collecting any current data, the current meter and DSA have to be "zeroed out"; zero current reference has to be established on the DSA. Follow this interim procedure to zero reference the current meter and DSA.

a) Select 200 mA/10mV per div. on the current amplifier.

b) Remove the current probe from the circuit and close the probe. Place the probe in a magnetic benign location.

c) Adjust the "y" axis voltage range to ±4 mV.

d) Place the DSA in "Free Run" Trigger and depress "Start Capture" on the DSA.

e) With the "capture in process", adjust the "output DC level" control on the current amplifier to indicate zero current on the DSA.

f) Position the current probe to its original location in accordance with Figure 9, and return the DSA to "Ext" trigger.

The instrument is now ready to capture and plot 8 seconds of data.

4. Adjust external power supply for +28 Vdc. Turn the unit ON by selecting [9] MODULE POWER, set up the operating modes as defined in paragraph 3.2.3.5 (reference the command screen parameters below). If necessary, re-adjust the external power supply for 28 Vdc.

COMMANDS

[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	YES	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]

POWER [4] ON

5. Start the DSA signal capture by depressing "Start Capture".

6. Obtain the first 2 second PLB current waveform by selecting 0 to 2 seconds time span. Refer to Figure 10 for a typical waveform. Turn OFF the "X" cursor if it is ON. Turn the "X" cursor ON. The cursor will appear at the highest peak. Ensure this value is less than or equal to 1.3 amps. Record value on TDS 4.

7. Compute the peak current as follows:
Multiply the maximum Y value by the current/div as selected on the current amplifier. As an example, if the current amplifier is set up to display 200 mA/10 mV per division, and the maximum Y value = 276 mV:

60 mV x (200 mA/10 mV) = 1200 mA = 1.20 amps

3.2.4.2.2.2 ***PLB measured from 2 to 4 seconds***. The PLB operation, from 2 to 4 seconds, shall be verified as follows:

1. Reset the dynamic analyzer in accordance with 3.2.4.2.2.1(2).

2. Change the PRE-TRIGGER DELAY setting of the dynamic signal analyzer to 1.9 seconds.

3. Obtain a hard copy of the signal displayed on the dynamic signal analyzer (refer to Figure 10 for typical waveform).

4. From the hard copy obtained in step 3, calculate the peak current. Record the peak current and bus current values during the integrate/hold, dump (I/H, D) time period (refer to Figure 10) on TDS 4.

3.2.4.2.2.3 ***PLB measured from 4 to 6 seconds***. The PLB operation, from 4 to 6 seconds, shall be verified as follows:

1. Reset the dynamic analyzer in accordance with 3.2.4.2.2.1(2).

2. Change the PRE-TRIGGER DELAY setting of the dynamic signal analyzer to 3.9 seconds.

3. Obtain a hard copy of the signal displayed on the dynamic signal analyzer (refer to Figure 10 for typical waveform).

4. From the hard copy obtained in step 3, calculate the peak current. Record the peak current and bus current values during the integrate/hold, dump (I/H, D) time period (refer to Figure 10) on TDS 4.

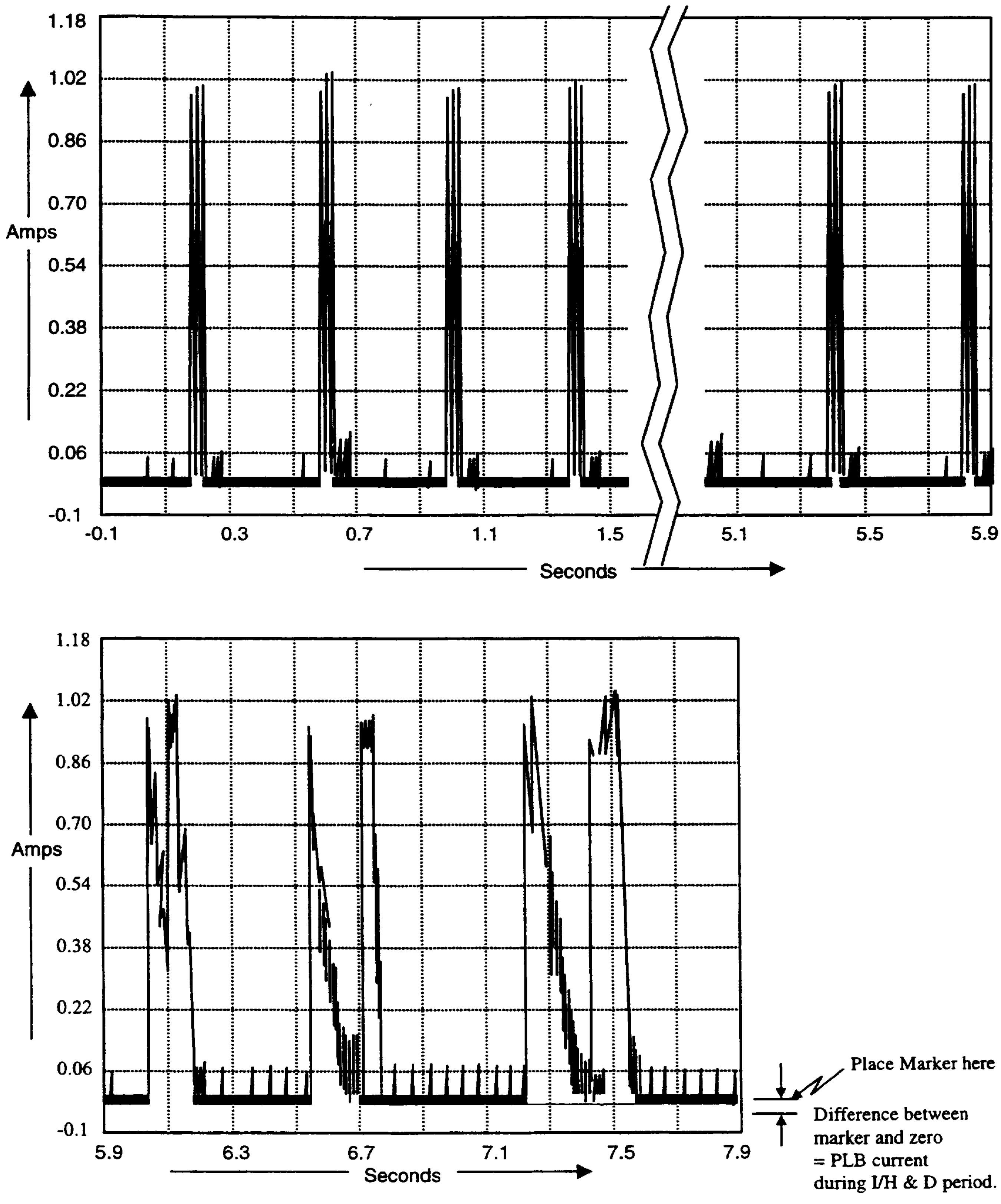


Figure 10. Typical Load Current Waveforms from the +28 V Pulse Load Bus

3.2.4.2.2.4 ***PLB measured from 6 to 8 seconds.*** The PLB shall be measured as follows:

1. Reset the dynamic analyzer in accordance with 3.2.4.2.2.1(2).

2. Change the PRE-TRIGGER DELAY setting of the dynamic signal analyzer to 5.9 seconds.

3. Obtain a hard copy of the signal displayed on the dynamic signal analyzer.

4. From the hard copy obtained in step 3, calculate the peak current. Record the peak current and bus current values during the integrate/hold, dump (I/H, D) time period (refer to Figure 10) on TDS 4.

3.2.4.2.2.5 ***Eight second integrated current measurement.*** To observe the PLB integrated (8 sec.) current waveform on the dynamic signal analyzer, configure the dynamic signal analyzer as follows:

Select **SCALE**
  Select X Fixd Scale; Enter 0.0, 8; Select Sec
  Select Y Fxd Scale; Enter –10, 70; Select mV
Select **VIEW INPUT**
  Select Time Record: Note – the display heading changes to read "Cap Tim Rec"
Select **MATH**
  Select Next
Select **Intgrt**:
  Note – the display changes to present an integrated value of the current waveform.
Select **X (cursor)**
  Move the X marker to the maximum right of the display. The Y value is indicative of the integrated current value over the entire 8 second period (in amp-sec).

Multiply the maximum Y value by the current/div as selected on the current amplifier, then divide by 8 seconds to acquire the average current value. As an example: if the current amplifier is set up to display 200 mA/10 mV per division, and the maximum Y value = 32.4 mV-sec:

[32.4 mV-sec x (200 mA/10 mV)]/8 sec = 81 mA

Enter the calculated integrated value on TDS 4.

3.2.4.2.2.6 ***PLB turn-on transient***

1. Configure the unit and test equipment as shown in Figure 9. Obtain DSA trigger from J4-14. Verify that switches 5, 6, 18 and 19 of the breakout box are in the OPEN position.

2. Configure the Dynamic Signal Analyzer (DSA) as follows:

Select **MEAS MODE**
Select *Time Capture*
Select *Capture Select*
Select *Capture Length*; Enter *500.0*; Select *msec*
Select **FREQ**
Select *Freq Span*; Enter *20*; Select kHz
Select E SMPL *Off*
Select *Time Length*; Enter 32.*0*;
Select *msec*
Select **SELECT MEAS**
Select *Power Spec*
Select *CH1 Active*
Select **WINDOW**
Select *Hann*
Select **SOURCE**
Select *Source Off*
Select **AVG**
Select *Avg Off*
Select *Tim Av Off*
Select ***RANGE***
Select *Chan 1 Range;* Enter *1;* Select *V*

Select **INPUT COUPLE**
Select *CH1 DC*
Select *CH1 Ground*
Select **INPUT TRIG**
Select *Trig Level;* Enter *1;* Select *V*
Select *Arm AU*
Select *Extenal*
Select *Ext;* Select *Slope(-)*
Select **TRIG DELAY**
Enter 0; Select *µSec*
Select **COORD**
Select *Real*
Select **VIEW INPUT**
Select *Time Buff*
Select **SCALE**
Select *X Fixd Scale:* Enter *0.0, 25*
Select *msec*
Select *Y Fixd Scale*; Enter *–10, 470*
Select *mV*
Select **UNITS**
Select *Hz (sec)*

NOTE

Prior to collecting any current data, the current meter and DSA have to be "zeroed out"; zero current reference has to be established on the DSA. Follow this interim procedure to zero reference the current meter and DSA.

a) Select 200 mA/10mV per div. on the current amplifier.

b) Remove the current probe from the circuit and close the probe. Place the probe in a magnetic benign location.

c) Adjust the "y" axis voltage range to ±4 mV.

d) Place the DSA in "Free Run" Trigger and depress "Start Capture" on the DSA.

e) With the "capture in process", adjust the "output DC level" control on the current amplifier to indicate zero current on the DSA.

f) Position the current probe to its original location in accordance with Figure 9, and return the DSA to "Ext" trigger.

3. Adjust external power supply for +28 Vdc. Turn the unit ON by selecting [9] MODULE POWER; set up the operating modes as defined in paragraph 3.2.3.5 (reference the command screen parameters below). If necessary, re-adjust the external power supply for 28 Vdc.

COMMANDS

[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	YES	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

4. Turn the unit OFF by executing command [9] MODULE POWER. Confirm the command has been executed on the STE display.

5. Start the DSA signal capture by depressing "Start Capture"; wait for the DSA message "waiting for trigger" before proceeding.

6. On the STE computer, select [9] MODULE POWER and obtain a record of the +28 PLB Turn on current waveform. On the STE computer, select [9] MODULE POWER to turn the instrument's power OFF. Adjust the display time base and voltage sensitivity to allow for adequate current and pulse duration measurements. Plot the obtained waveform and attach a hard copy of the scan to TDS 4. Refer to Figure 11 for an example of the expected waveform.

7. Measure the Turn-On pulse width; record this value on TDS 4.

8. Compute the peak current as follows:

   Measure the maximum Y value by the current/div as selected on the current amplifier. As an example, if the current amplifier is set up to display 200 mA/10 mV per division, and the maximum Y value = 276 mV:

   276 mV x (200 mA/10 mV) = 5520 mA = 5.52 amps

   Record this value on TDS 4.

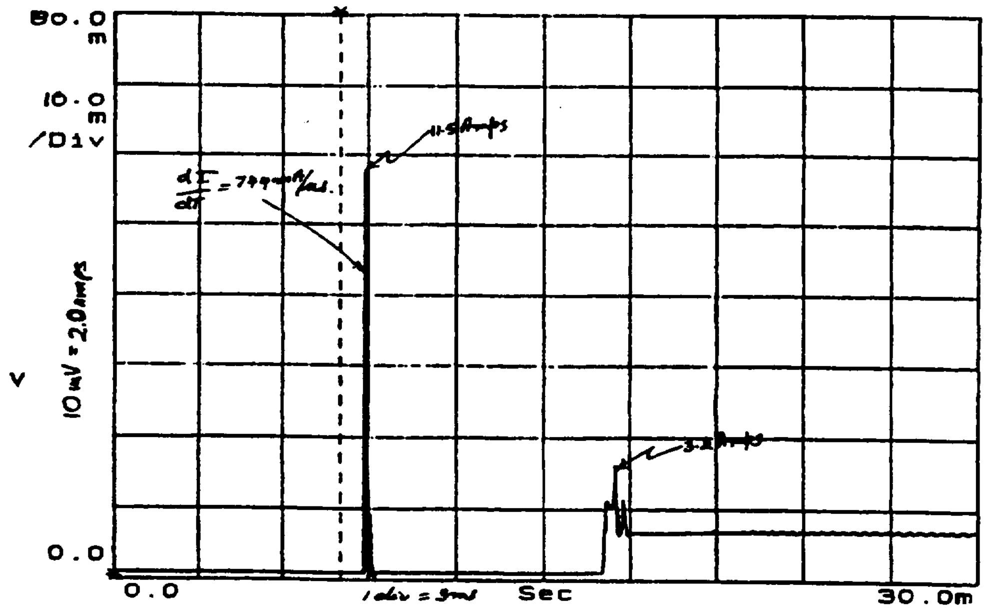
9. The 1st derivative of the current waveform must be calculated. Compute the dI/dT as follows:

   The most probable location of the greatest current demand is during the first positive transition after voltage application. If this is the case, expand the segment of the display and measure the greatest voltage transition in the smallest time transition. The change in voltage times the current/div as selected on the current amplifier produces the change in current. Next divide this change in current by the change in time (in microseconds). This value is dI/dT. Example:

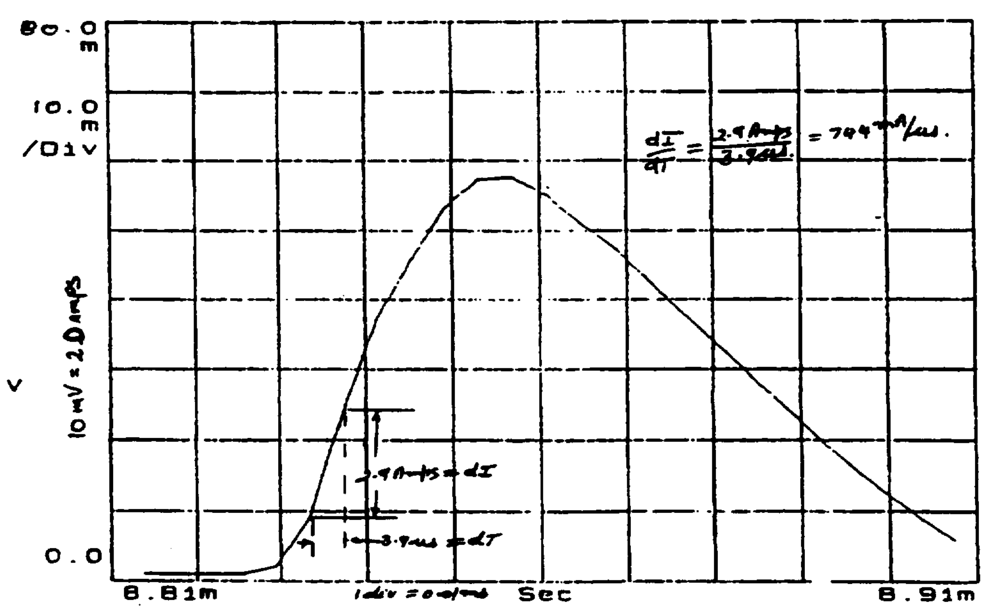
   Change in voltage .... 144 mV
   Change in time (microseconds)............ 19.5 μs
   Current/div on current amplifier .... 200 mA/10 mV

   144 mV x (200 mA/10 mV)/19.5 μs = 147.7 mA/μs

10. Record the computed value on TDS 4.



AMSU-A1 PLB Worst Case Transient



AMSU-A1 PLB $\frac{dI}{dT}$ Worst Case Transient

Figure 11. +28V Pulse Load Bus Turn-on Transient

3.2.4.2.2.7 ***PLB current in warm cal, cold cal and Nadir mode***

1. Place instrument in Warm Cal mode.
2. Measure and record PLB steady state current on TDS 4 with a multimeter in the Current mode.
3. Repeat step 2 after placing instrument in Cold Cal mode.
4. Repeat step 2 after placing instrument in Nadir mode.
5. Repeat step 2 after placing instrument in Warm Calm mode and commanding both motors off.
6. After stabilizing for a minimum of 20 scans, acquire one Full Scan mode printout, and attach it to TDS 4.

3.2.4.2.2.8 ***Instrument feedback test (PLB).*** Instrument feedback test will be performed in the EMI/RFI chamber using EMI/RFI test procedure AE-26151/5.

3.2.4.2.2.9 ***Transient susceptibility and power quality tests.*** The tests that follow will demonstrate the AMSU-A1 instrument will operate within specified parameters when the transients (low and high frequency) are applied directly to the power lines.

3.2.4.2.2.9.1 ***Equipment setup.*** Set up the test equipment and connect to the instrument as shown in Figure 12.

3.2.4.2.2.9.2 ***Low frequency load induced transients.*** The AMSU instrument shall be capable of normal operation before and after positive and negative transients are injected into the Pulse Load Bus power line at the amplitude and duration specified in Figure 13. Perform the Low Frequency Load Induced Transients as follows:

1. With the exception of the external power supply, turn ON all the test equipment.
2. Place the signal generator in ARB 1 mode. With the external power supply OFF, while monitoring the oscilloscope, adjust the amplitude and frequency output of the signal generator to attain the signal characteristics as shown in Figure 13.
3. Remove the signal generator output connection from the power supply. While monitoring the external power supply dc voltage with the meter, turn the external power supply ON.
4. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.
5. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22. Attach printouts to TDS 51.
6. Connect the signal generator to the external power supply. Wait for the instrument to complete three (3) scans. Remove the signal generator output from the power supply.
7. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22. Attach printouts to TDS 51.
8. Record any deviations in the functional performance of the AMSU instrument on TDS 51.

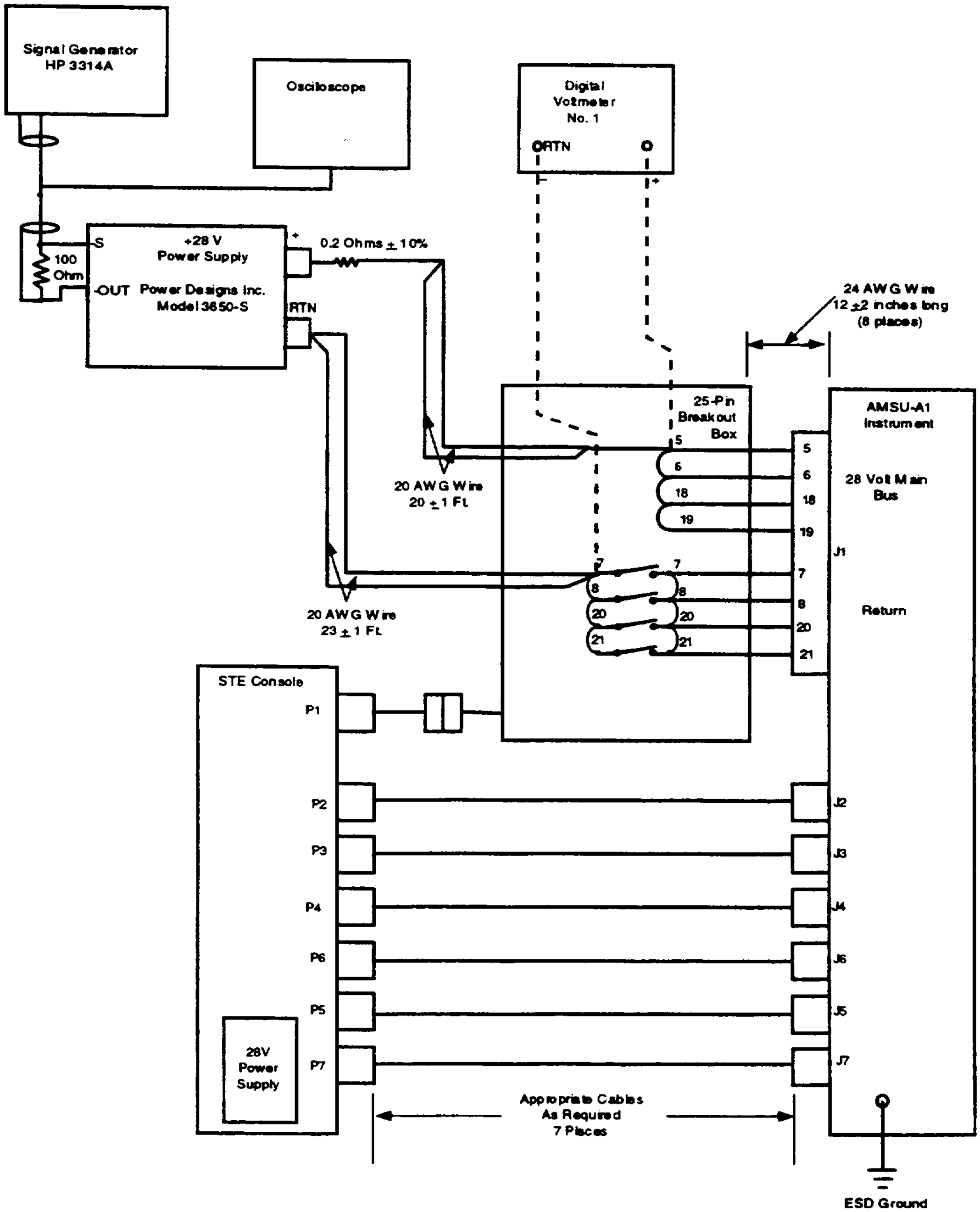


Figure 12. +28V PLB Transient Susceptibility and Power Quality Tests Setup

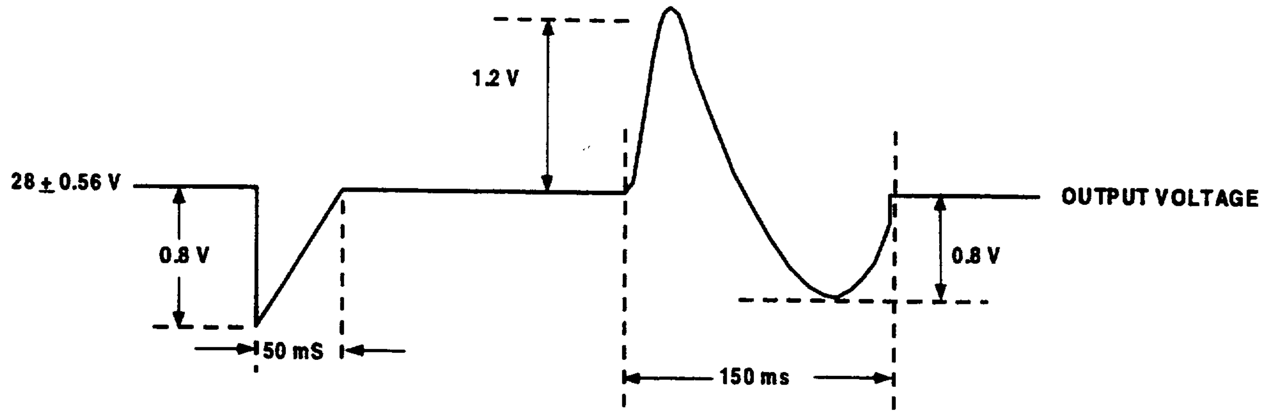


Figure 13. Load Induced Transient (Pulse Load)

3.2.4.2.2.9.3 ***High frequency load induced transients***. The AMSU instrument shall be capable of normal operation before and after positive and negative transients are injected into the power line. The interfering frequencies are simulated by using the triangular wave output of the signal generator. There are three signals to be sequentially injected; the frequencies and amplitudes as produced by the signal generator and measured by the oscilloscope are:

Frequency (Hz)	Amplitude
1.43	200 mVpp
2.86	1.00 Vpp
6.67	1.50 Vpp

Tolerance on the above values is ±10%.

Perform the High Frequency Load Induced Transients as follows:

1. With the exception of the external power supply, turn ON all the test equipment.

2. With the external power supply OFF, while monitoring the oscilloscope, adjust the amplitude and frequency output of the signal generator output as follows:

amplitude	200 mVpp
offset	0.000 V
frequency	1.430 Hz

3. Remove the signal generator output connection from the power supply. While monitoring the external power supply dc voltage with the meter, turn the external power supply ON.

4. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.

5. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22.

6. Connect the signal generator to the external power supply. Wait for the instrument to complete three (3) scans. Remove the signal generator output from the power supply.

7. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22.

8. Repeat steps 2-4 and 6-7 for 2.86 Hz and 1.0 Vpp.

9. Repeat steps 2-4 and 6-7 for 6.67 Hz and 1.5 Vpp.

10. Record any deviations in the functional performance of the AMSU instrument on TDS 51.

3.2.4.2.3 *Analog telemetry bus*

3.2.4.2.3.1 ***Operating power measurements***. The purpose of this test is to calculate the operating power of the Analog Telemetry Bus from measurements taken of the bus voltage and current.

1. Configure the instrument as shown in Figure 14.

2. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.

3. Measure the bus current and record on TDS 5.

4. From the measurements recorded on TDS 5, calculate the operating power for the telemetry bus and record on TDS 5.

3.2.4.2.3.2 ***Instrument feedback test (ATB)***. Instrument feedback test will be performed in the EMI/RFI chamber using EMI/RFI test procedure AE-26151/5.

3.2.4.2.3.3 ***Transient susceptibility and power quality tests (ATB)***. The tests that follow will demonstrate the AMSU-A1 instrument will operate within specified parameters when the transients (low and high frequency) are applied directly to the power lines.

3.2.4.2.3.3.1 ***Equipment setup***. Set up the test equipment and connect to the instrument as shown in Figure 15 (exceptions: remove the current probe and amplifier; connect the oscilloscope to monitor output of the signal generator).

3.2.4.2.3.3.2 ***Low frequency load induced transients***. The AMSU instrument shall be capable of normal operation before and after positive and negative transients are injected into the power line at the amplitude and duration specified in Figure 16. Perform the Low Frequency Load Induced Transients as follows:

1. With the exception of the external power supply, turn ON all the test equipment.

2. Place the signal generator in ARB 0 mode. With the external power supply OFF, while monitoring the oscilloscope, adjust the amplitude and frequency output of the signal generator to attain the signal characteristics as shown in Figure 16.

3. Remove the signal generator output connection from the power supply. While monitoring the external power supply dc voltage with the meter, turn the external power supply ON.

4. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.

5. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22. Attach printouts to TDS 51.

6. Connect the signal generator to the external power supply. Wait for the instrument to complete three (3) scans. Remove the signal generator output from the power supply.

7. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22. Attach printouts to TDS 51.

8. Record any deviations in the functional performance of the AMSU instrument on TDS 51.

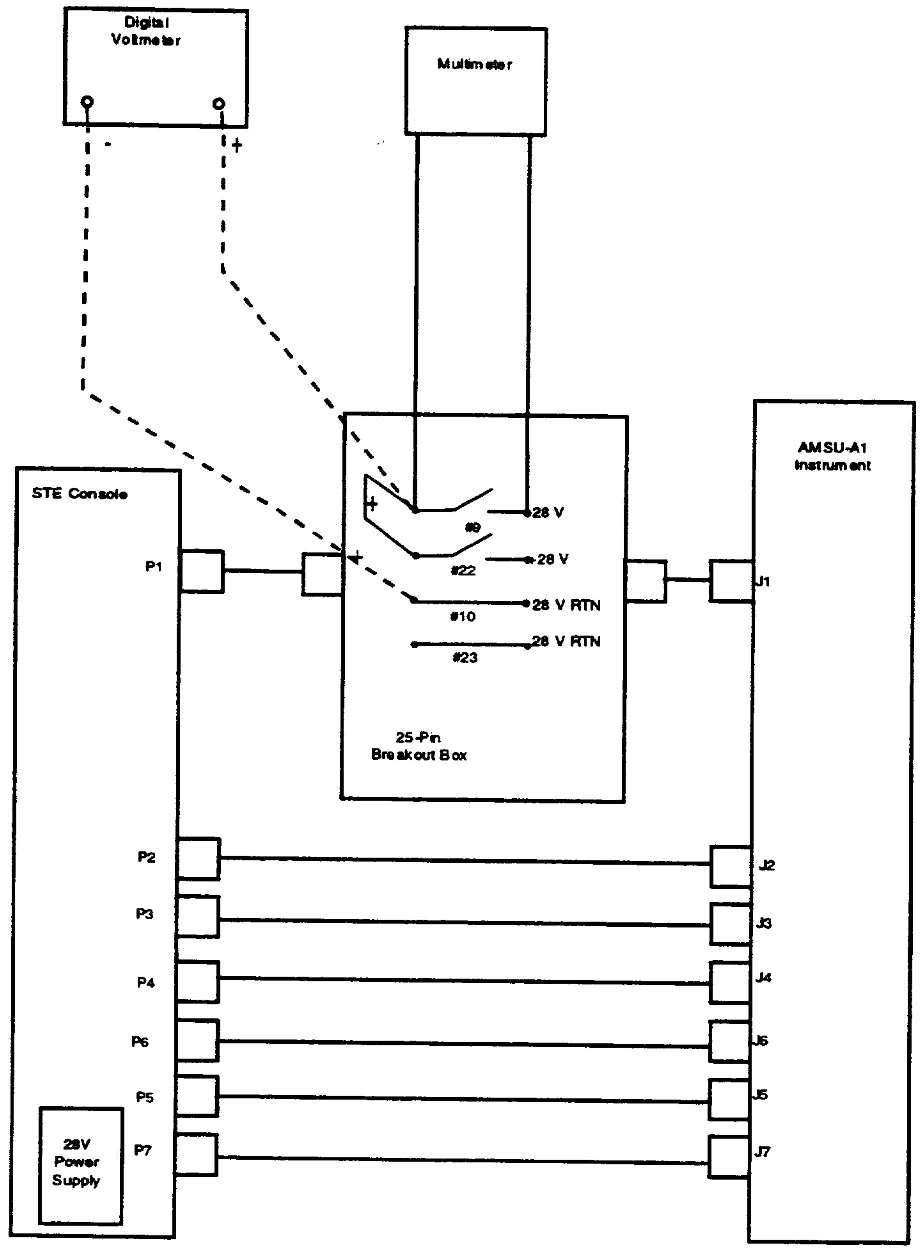


Figure 14. +28V Analog Telemetry Bus Test Setup

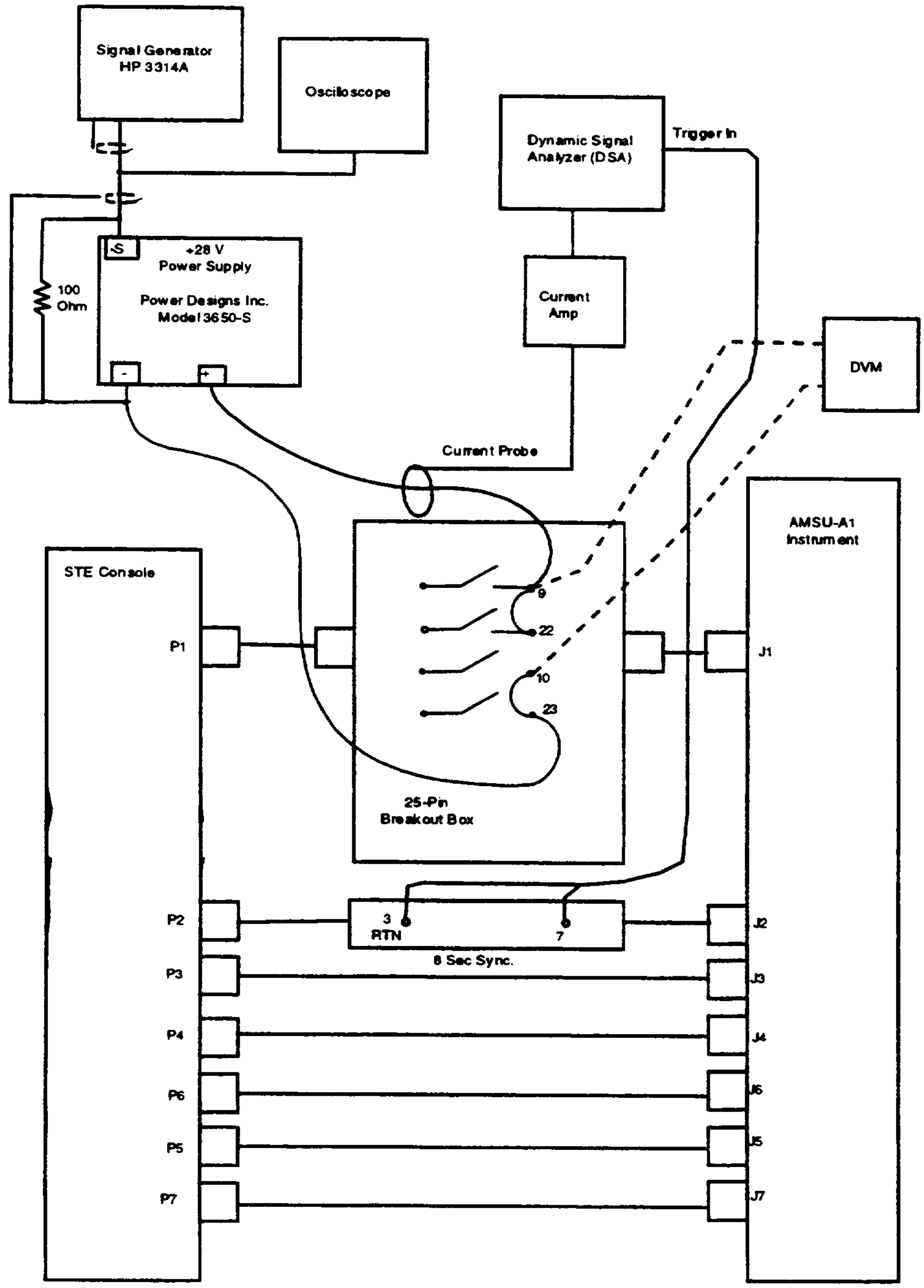


Figure 15. +28 Vdc Analog Telemetry Bus Ripple Current and Transient Susceptibility Test Setup

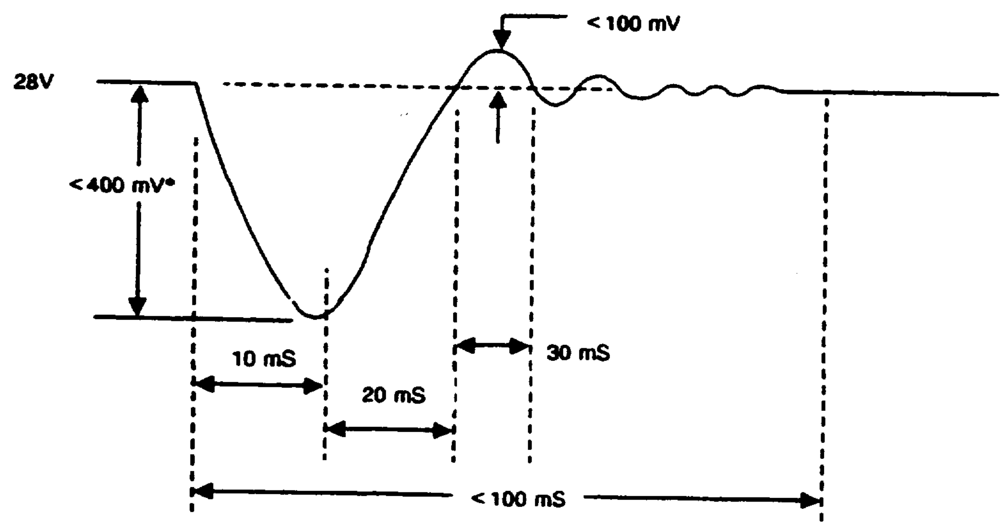


Figure 16. Load Induced Transient (Main Bus)

3.2.4.2.3.3.3 ***High frequency load induced transients***. The AMSU instrument shall be capable of normal operation before and after positive and negative transients are injected into the power line. The interfering frequencies are simulated by using the triangular wave output of the signal generator. There are three signals to be sequentially injected; the frequencies and amplitudes as produced by the signal generator and measured by the oscilloscope are:

Frequency (Hz)	Amplitude
1.43	200 mVpp
2.86	1.00 Vpp
6.67	1.50 Vpp

Tolerance on above values is ±10%.

Perform the High Frequency Load Induced Transients as follows:

1. With the exception of the external power supply, turn ON all the test equipment.

2. With the external power supply OFF, while monitoring the oscilloscope, adjust the amplitude and frequency output of the signal generator output as follows:

.... amplitude		200 mVpp
offset	0.000 V	
frequency	1.430 Hz	

3. Remove the signal generator output connection from the power supply. While monitoring the external power supply dc voltage with the meter, turn the external power supply ON.

4. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.

5. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22.

6. Connect the signal generator to the external power supply. Wait for the instrument to complete three (3) scans. Remove the signal generator output from the power supply.

7. Acquire one (1) Full Scan Mode printout; verify the printout meets the requirements of TDS 19 thru 22.

8. Repeat steps 2-4 and 6-7 for 2.86 Hz and 1.0 Vpp.

9. Repeat steps 2-4 and 6-7 for 6.67 Hz and 1.5 Vpp.

10. Record any deviations in the functional performance of the AMSU instrument on TDS 51.

3.2.4.2.4 *+10 volt interface bus test*

3.2.4.2.4.1 *Operating power measurements*. The purpose of this test is to calculate the operating power of the +10 Vdc Interface Bus from measurements taken of the bus voltage and current.

1. Configure the instrument as shown in Figure 17.

2. Turn the instrument ON and place the instrument in the modes congruent with paragraph 3.2.3.5.

3. Measure the bus current and record on TDS 6.

4. From the measurements recorded on TDS 6, calculate the operating power for the telemetry bus and record on TDS 6.

3.2.4.2.4.2 *Instrument feedback test*. Instrument feedback test will be performed in the EMI/RFI chamber using EMI/RFI test procedure AE-26151/5.

3.2.4.2.5 *Power input test for LPT*. For LPT, test the power input as follows:

1. Configure the unit and test equipment as indicated in Figure 18.

2. Turn the unit ON as described in 3.2.3.5. Set the STE power supply voltage at 28.00 ± 0.05 Vdc using 25-pin breakout box and DVM #1.

NOTE

Do not proceed without successful completion of step 2.

3. Record the voltage from DVM #1 and current in Amps from STE current meter on TDS 7.

3.2.4.3 *Clock, commands, and data system test*. This procedure verifies the clock signal, the commands, and the data requirements specified in S-480-80, GIIS IS-3267415, and UIIS IS-2617547.

3.2.4.3.1 *Test sequence*. The test sequence shall be as follows:

a. Clock signals verification

b. Commands and Digital-B telemetry verification

c. Data output verification

    (1) Digital-A

    (2) Analog telemetry

    (3) Test points

d. GSE modes.

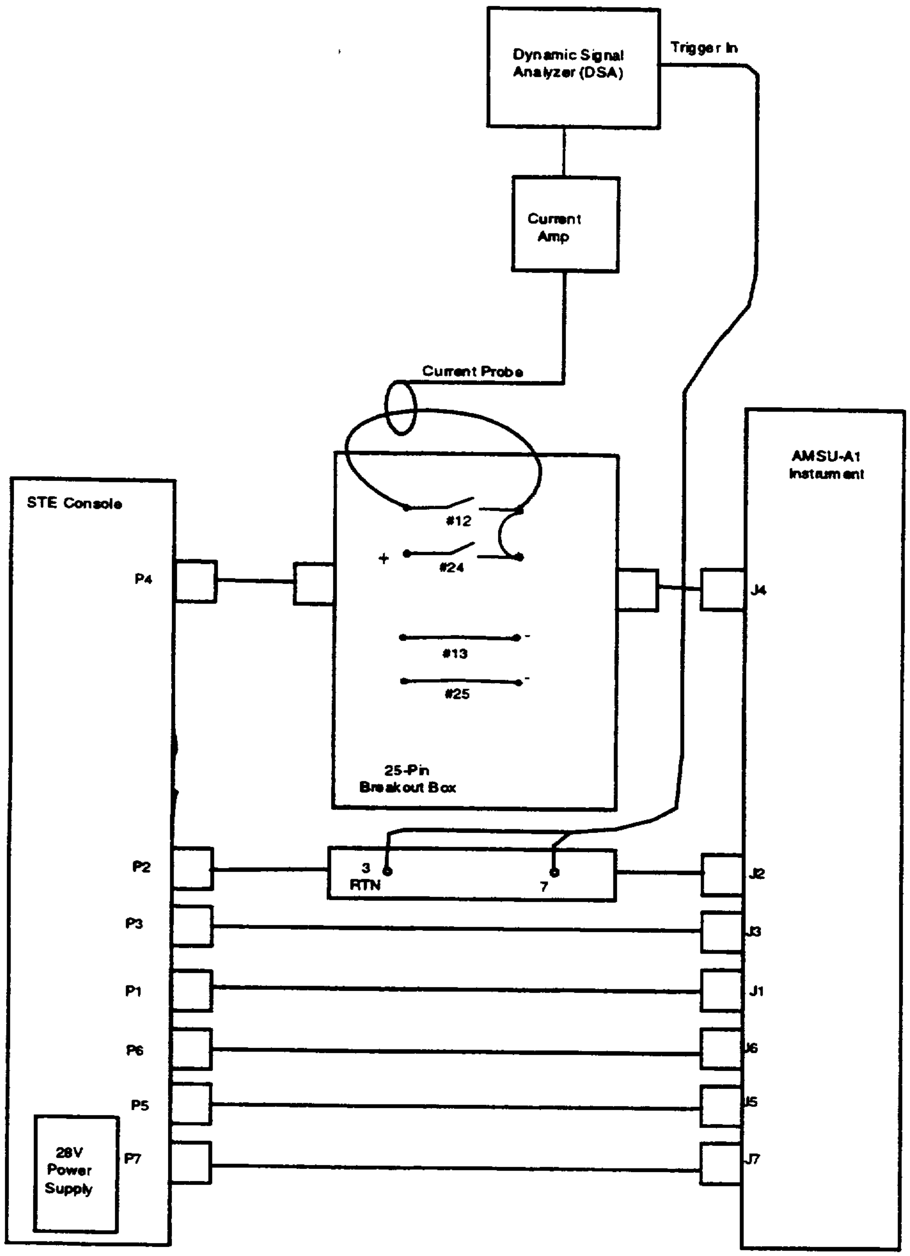


Figure 17. +10V Interface Bus Operating Power and Ripple Current Measurements Test Setup

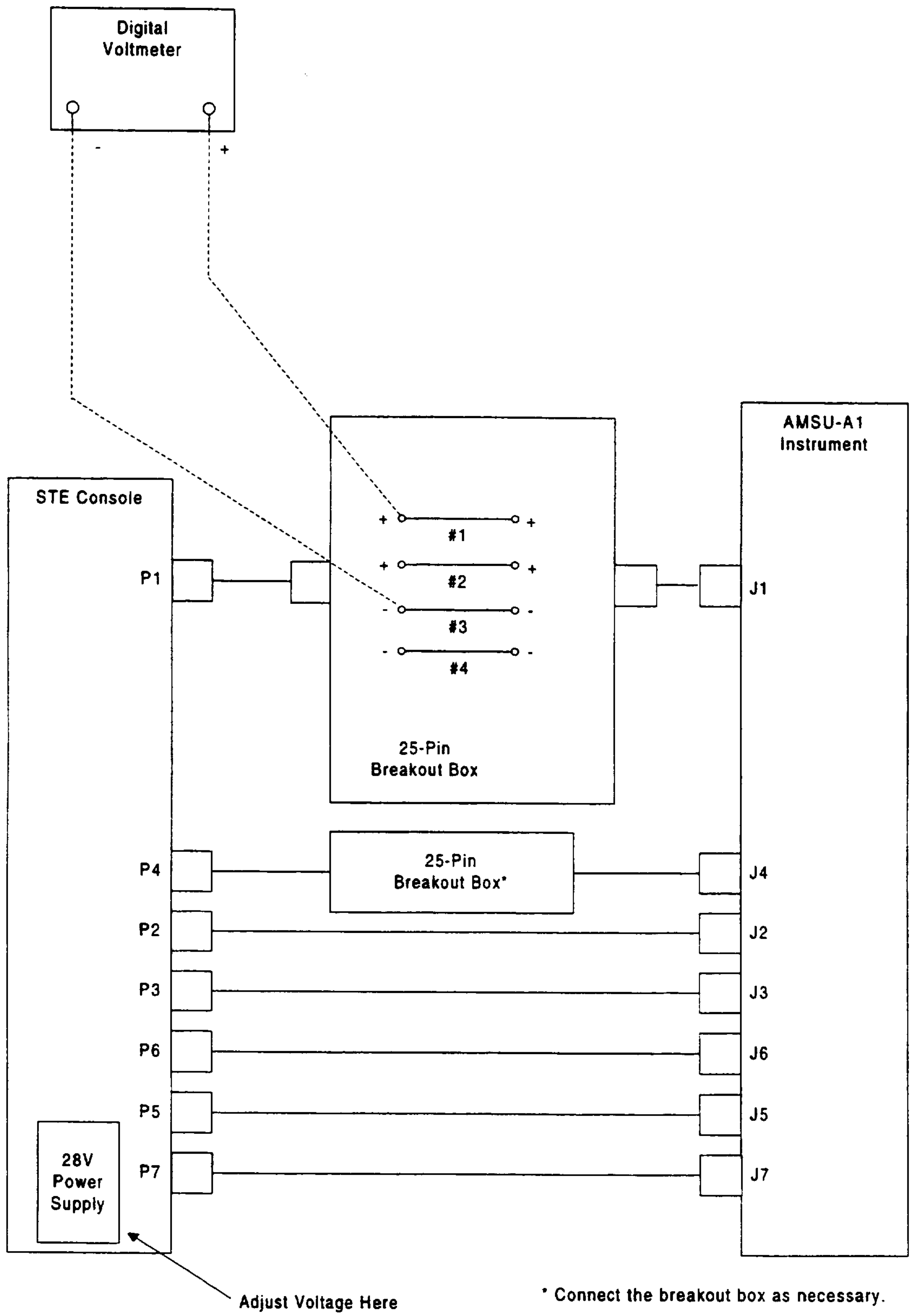


Figure 18. +28 V Main Load Bus Test Setup (For LPT Only)

3.2.4.3.2 ***Clock signals test.*** The following items shall be tested to verify the clock signals. Refer to Figure 19 for graphical representation of these pulses.

a. 1.248 MHz clock

b. 8 seconds frame pulse

c. A1 select pulse

d. C1 shift pulse

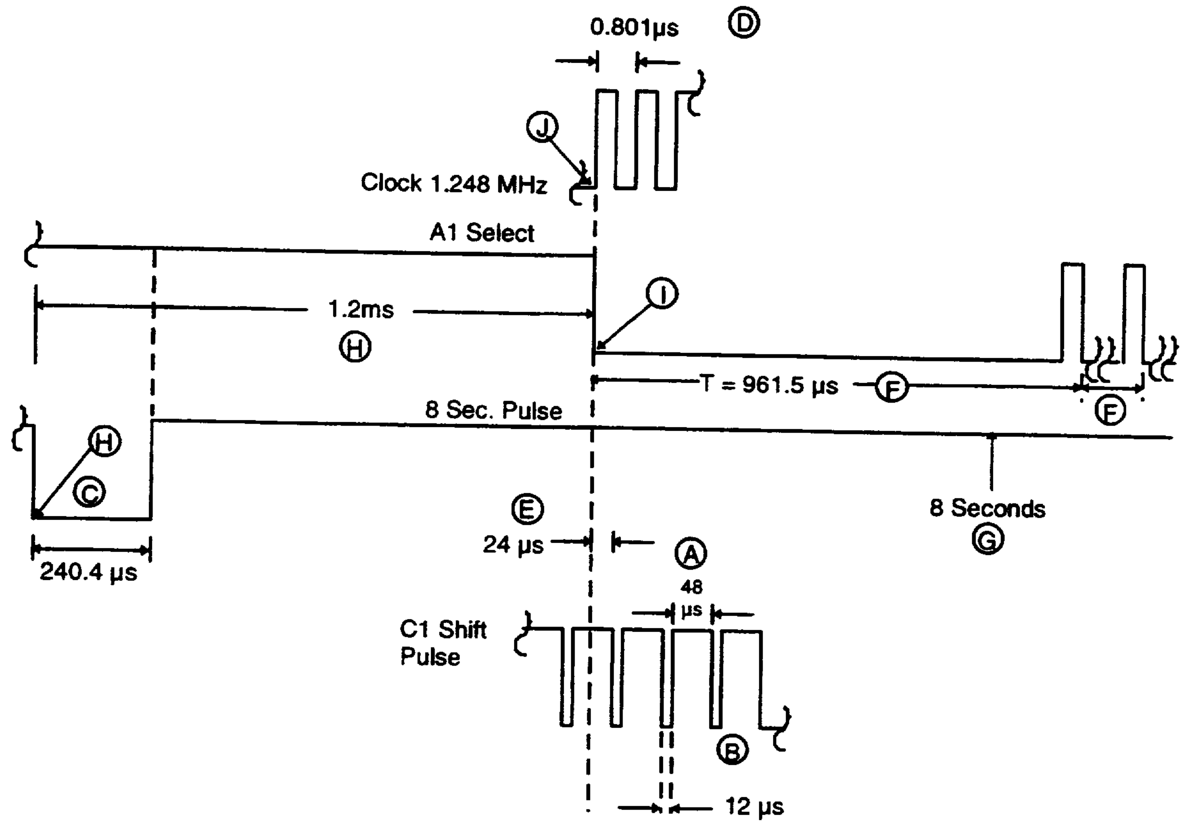


Figure 19. Clock Pulses Timing and Synchronization

3.2.4.3.2.1 ***1.248 MHz synchronization clock.*** Perform the following procedures:

1. Configure the unit and the test equipment as indicated in Figure 20.

2. Connect CHANNEL-1 of the oscilloscope to the 1.248 MHz clock signal as shown in Figure 20.

3. Turn the unit ON as described in 3.2.3.5.

NOTE

Do not proceed without successful completion of step 3.

4. Using the oscilloscope, measure the 1.248 MHz clock signal. Record the data and attach the photograph or plot on TDS 8.

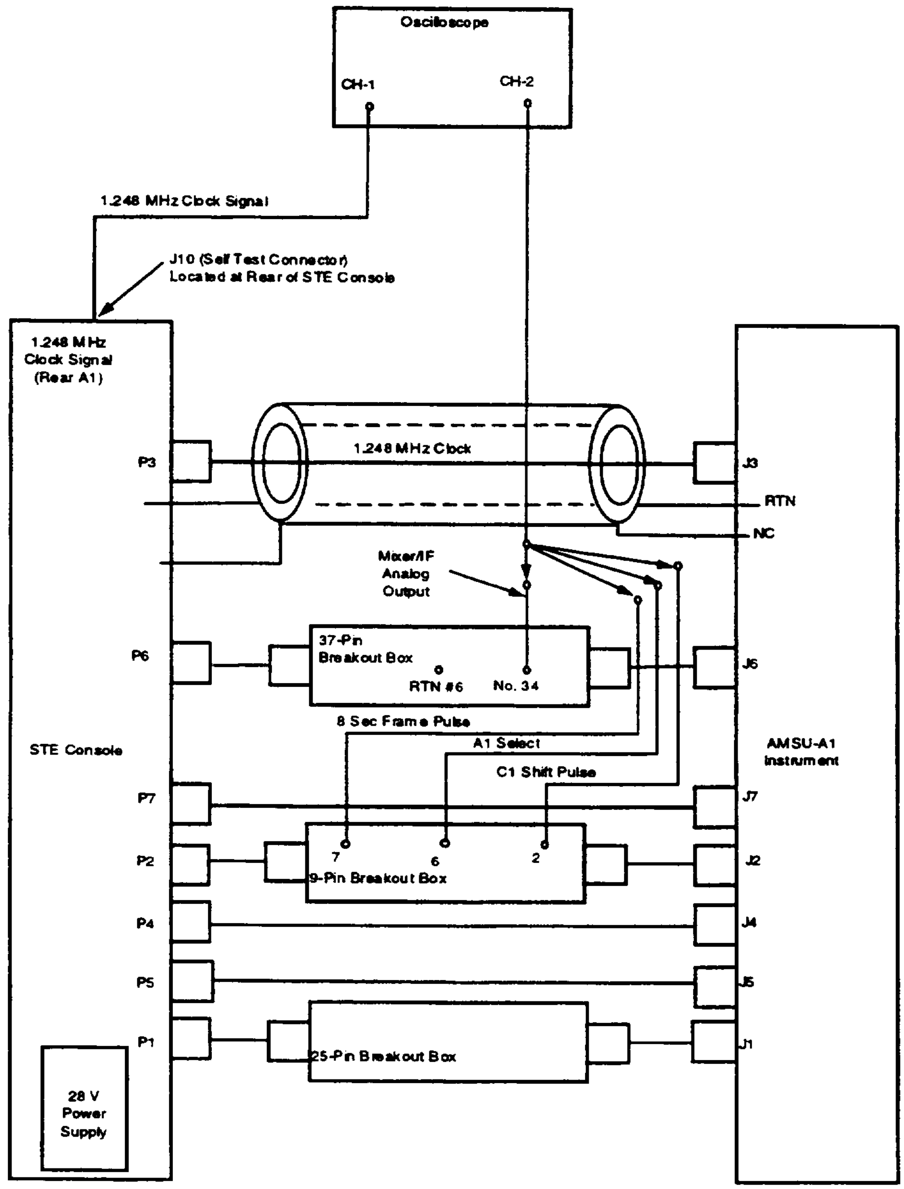


Figure 20. Clock Signals Test Setup

3.2.4.3.2.2 ***C1 shift pulse verification***. Connect CHANNEL-2 of the oscilloscope to Pin 2 of the 9-pin breakout box (P2-J2). Photograph or plot the oscilloscope display and record the information indicated on TDS 9.

3.2.4.3.2.3 ***A1 select pulse verification***. Connect CHANNEL-2 of the oscilloscope to Pin 6 of the 9-pin breakout box (P2-J2). Photograph or plot the oscilloscope display and record the information indicated on TDS 10.

3.2.4.3.2.4 ***8-seconds frame sync pulse verification***

1. Connect CHANNEL-2 of the oscilloscope to Pin 7 of the 9-pin breakout box (P2-J2). Photograph or plot the oscilloscope display and record the information indicated on TDS 11. (Record of "C" timing only, is required.)

2. Turn the unit OFF by executing the softkey command [11] MODULE TOTALLY OFF to OFF. Leave both breakout boxes in place.

3.2.4.3.2.5 ***Synchronization signal relationship***. The following synchronization signal relationship shall be verified.

a. A1 select pulse and the 8-second frame sync pulse

   1. With the unit off, configure the unit and the test equipment as indicated in Figure 21.

   2. Connect CHANNEL-1 of the oscilloscope to the breakout box, Pin 6 (A1).

   3. Adjust the amplitude and the trigger level of the oscilloscope for best picture.

   4. Photograph or plot the oscilloscope display and attach the photograph or plot in the space provided on TDS 12.

   5. From the photograph or plot, verify the synchronization as described in TDS 12. Record pass or fail.

b. A1 select pulse and C1 shift pulse

   1. Connect CHANNEL-2 of the oscilloscope to the breakout box Pin 2 (C1 shift pulse).

   2. Adjust the amplitude and the trigger level of the oscilloscope for best picture.

   3. Photograph or plot the oscilloscope display and attach the photograph or plot in the space provided on TDS 12, sheet 2.

   4. From the photograph or plot, verify the synchronization as described in TDS 12, sheet 2. Record pass or fail.

c. A1 select pulse and 1.248 MHz clock.

   1. Connect CHANNEL-2 of the oscilloscope to the clock connector located at the rear of the STE.

   2. Adjust the amplitude and the trigger level of the oscilloscope for best picture.

   3. Photograph or plot the oscilloscope display and attach the photograph or plot in the space provided on TDS 13.

   4. From the photograph or plot, verify the synchronization as described in TDS 13. Record pass or fail.

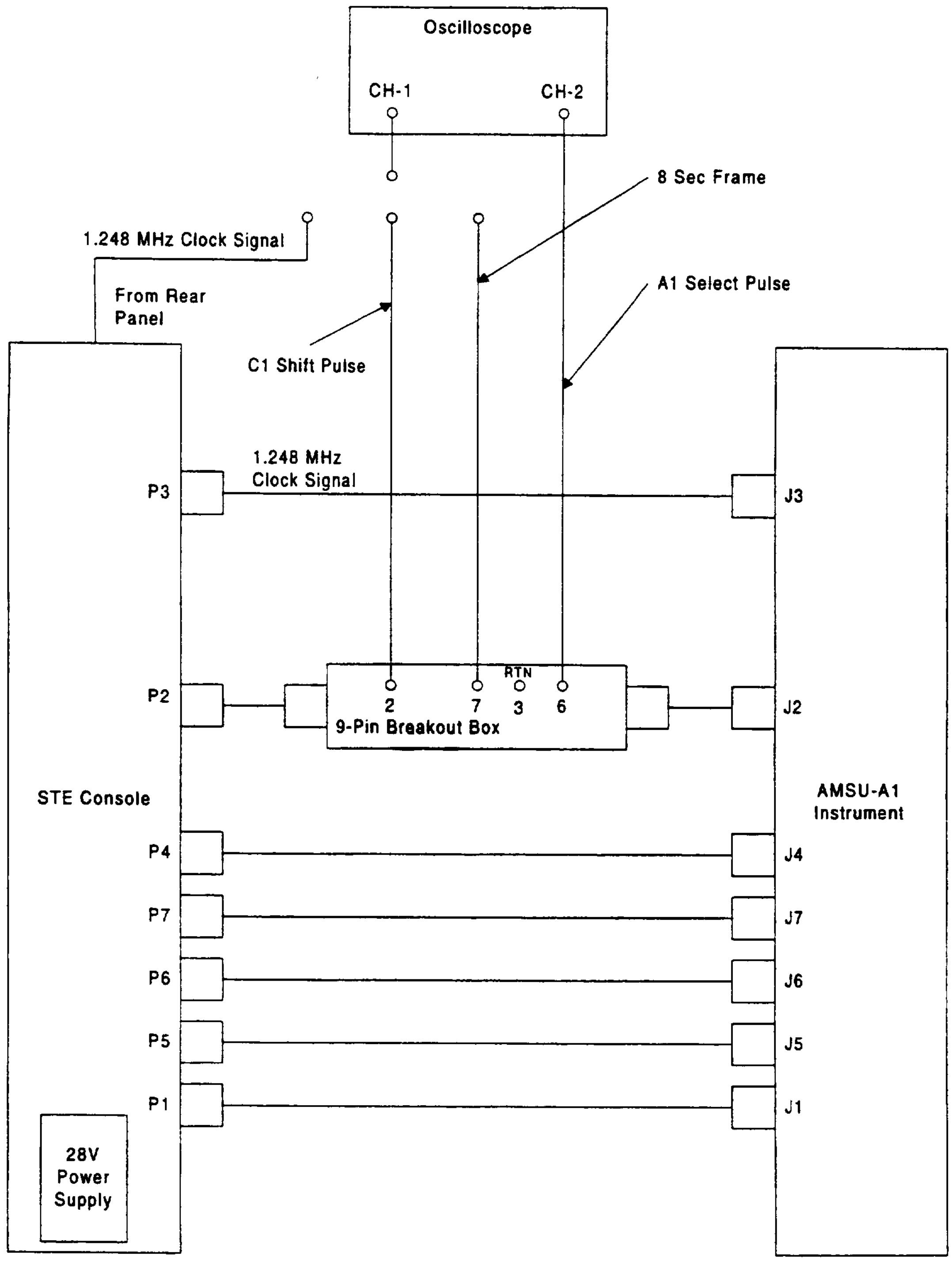


Figure 21. Synchronization Signal Relationships Test Setup

3.2.4.3.3 ***Commands and digital-B telemetry test.*** Commands and digital-B telemetry shall be verified in accordance with the following paragraphs.

3.2.4.3.3.1 ***Module totally off.*** Commands and digital-B telemetry, with the module totally off, shall be tested as follows:

1. Turn the unit on as follows:

   a. Press [12] POWER ON (from 1st screen).

   b. Press [2] MONITOR ONLY (from 1st screen)

   c. Press [14] COMMANDS (from 2nd screen)

   Verify the screen displays the default parameters below.

		COMMANDS			
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	NO	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	YES	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

2. From the Commands Menu, execute command [11] MODULE TOTALLY OFF to OFF mode.

3. Wait at least 18 seconds, then verify that the following events are in effect:

   a. [11] MODULE TOTALLY OFF = OFF

   b. [12] SCANNER A1-1 POWER = OFF.

   c. [13] SCANNER A1-2 POWER = OFF.

   d. [10] SURVIVAL HEATER POWER = OFF

   Antenna reflectors for A1-1 and A1-2 pointing toward the warm load.

4. Record the above observations on TDS 14.

3.2.4.3.3.2 ***Survival heater power ON/OFF command.*** The survival heater power ON/OFF command shall be tested as follows:

1. Execute command [10] SURVIVAL HEATER POWER to ON mode. Wait at least 18 seconds. Verify that the command is in effect. Record observation on TDS 14.

2. Execute command [10] SURVIVAL HEATER to OFF mode. Wait at least 18 seconds. Verify that the command is in effect. Record observation on TDS 14.

3.2.4.3.3.3 ***Module power connect command.*** The module power connect command shall be tested as follows:

1. Execute command [9] MODULE POWER to CONNECT mode. Wait at least 18 seconds. Verify that the command is in effect. Record observation on TDS 14.

2. Verify that the current at the STE power supply is 0.5 to 4.3 Amperes. Record this information on TDS 14.

3.2.4.3.3.4 ***Phase lock loop (PLL) PLLO No. 1 / PLLO No. 2.*** The PLL PLLO No. 1/PLLO No. 2 command shall be tested as follows:

1. Execute [18] PLL POWER = PLLO#2
   Wait at least 18 seconds. Verify that the command is in effect. Record observation on TDS 14.

2. Execute [18] PLL POWER = PLLO#1
   Wait at least 18 seconds. Verify that the command is in effect. Record observation on TDS 14.

3.2.4.3.3.5 ***Scanner commands verification.*** The scanner commands shall be tested as follows:

1. Execute commands as necessary to obtain the following configuration:

	COMMANDS			
[9] MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10] SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11] MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	YES	[17]
[12] SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13] SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14] ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON				

Wait at least 18 seconds. Verify that the commands are in effect. Record observations on TDS 15.

2. Execute. [12] SCANNER A1-1 POWER = OFF
   [13] SCANNER A1-2 POWER = OFF

   Wait at least 18 seconds. Verify that the commands are in effect. Record observations on TDS 16.

3. Execute. [12] SCANNER A1-1 POWER = ON
   [13] SCANNER A1-2 POWER = ON

   Wait at least 18 seconds. Verify that the commands are in effect. Record observations on TDS 17.

3.2.4.3.3.6 ***Scanner position commands (A1-1 and A1-2) verification.*** Verify scanner position command operation as follows:

NOTE

Verification of the scan position is applicable to both antenna reflectors located at the high and low bays of the instrument (A1-1 and A1-2).

1. Execute: [14] ANTENNA WARM CAL POS = YES
   [17] ANTENNA FULL SCAN MODE = NO

   Wait at least 18 seconds. Verify that the commands are in effect. Record observation on TDS 18.

2. Execute: [15] ANTENNA IN COLD CAL POS = YES
   [14] ANTENNA WARM CAL POS = NO

   Execute: [19] COLD CAL POS MSB = zero
   [20] COLD CAL POS LSB = one

Wait at least 18 seconds. Verify that the commands are in effect. Record observation on TDS 18.

3. Execute: [19] COLD CAL POSITION MSB = ONE
[20] COLD CAL POSITION LSB = ZERO

Wait at least 18 seconds. Verify that the commands are in effect. Record observation on TDS 18.

4. Execute: [19] COLD CAL POSITION MSB= ONE
[20] COLD CAL POSITION LSB= ONE

Wait at least 18 seconds. Verify that the commands are in effect. Record observation on TDS 18.

5. Execute: [19] COLD CAL POSITION MSB= ZERO
[20] COLD CAL POSITION LSB= ZERO

Wait at least 18 seconds. Verify that the commands are in effect. Record observation on TDS 18.

6. Execute: [16] ANTENNA IN NADIR POSITION = YES
[15] ANTENNA IN COLD CAL POS = NO

Wait at least 18 seconds. Verify that the commands are in effect. Record observation on TDS 18.

7. Execute: [14] ANTENNA WARM CAL POS = YES

Wait at least 18 seconds. Verify that the commands are in effect. Record observation on TDS 18.

3.2.4.3.4 ***Digital-A data output verification***. The following items shall be tested to verify the digital-A data output:

a. Full scan (3.2.4.3.4.1)

b. Warm load (3.2.4.3.4.2)

c. Cold cal (3.2.4.3.4.3)

d. Nadir (3.2.4.3.4.4).

For each of the above scan modes, the following parameters will be subject to pass/fail criterion:

[I] Sync. sequence

[II] Unit I.D. and serial number

[III] Digital-B serial data verification

[IV] Reflector positions

[V] Radiometric data (scene data)

Radiometric data shall be obtained from two channels only, Channels 9 and 3. Channel 9 is physically located at the high bay of the sensor (A1-1 location) and Channel 3 is located at the lower bay of the sensor (A1-2 location).

[VI] Temperature sensors.

For the cold cal mode, reflector position [IV], verify the following:

(a) Cold cal position with MSB=1 and LSB=0

(b) Cold cal position with MSB=0 and LSB=1

(c) Cold cal position with MSB=1 and LSB=1.

NOTE

The calibration data for the selected AMSU-A1 sensor serial number is required prior to the start of this test. Refer to 3.2.4.3.4.1.

3.2.4.3.4.1 ***Full scan mode***. The digital-A data output in full-scan mode shall be tested as follows:

1. Turn the unit on. Execute commands as necessary to obtain the following configuration:

COMMANDS				
[9] MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10] SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11] MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	YES	[17]
[12] SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13] SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14] ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON				

2. Obtain a full printout (9 pages) of all the parameters ([I] through [VI]) described above, by touching the PRINT [3] FULL touch area. The computer will start printing all 9 pages of data.

3. Label 1st page of 9 pages with the unit serial number and the paragraph number corresponding to this test.

<u>(I), (II), and (III) Sync, Unit ID, and Digital-B Data</u>

4. Using Page 1 of the printout, verify that elements 0001 through 0008 are within the required values specified in TDS 19. Record pass or fail.

<u>[IV] Reflector position</u>

NOTE

To verify the following steps, the operator may print out the individual parameters by using AE-26157 and attach the data to each TDS.

5. Using the individual printout, verify that there is no "E" ERROR Flag (for S/N 102 through 104) on the computer printout. Record pass or fail on TDS 20. For S/N 105 and up, verify that position values are within ± 10 counts from requirement provided in TDS 6, AE-26002/1.

[V] Radiometric data

6. Using the individual printout, verify that the data are within the values specified on TDS 21. Record pass or fail.

[VI] Temperature sensors

7. Using the individual printout, verify that elements 1090 through 1180 are within the values specified on TDS 22 (sheets 1 and 2). Record pass or fail.

3.2.4.3.4.2 ***Warm cal mode***. The digital-A data output, in warm-cal mode shall be tested as follows:

1. Execute commands as necessary to obtain the following configuration:

		COMMANDS			
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	NO	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	YES	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

[I], [II], and [III] Sync, Unit ID, and Digital-B Data

2. Using Page 1 of the printout, verify that elements 0001 through 0008 are within the required values specified in TDS 23. Record pass or fail.

NOTE

To verify the following steps, the operator may printout the individual parameters by using AE-26157 and attach the data to each TDS.

[IV] Reflector position

3. Using the individual printout, verify that there is no "E" ERROR Flag (for S/N 102 through 104) on the computer printout. Record pass or fail on TDS 24. For S/N 105 and up, verify that position values are within ± 10 counts from requirement provided in TDS 6, AE-26002/1.

[V] Radiometric data

4. Using the individual printout, verify that the data are within the values specified on TDS 25. Record pass or fail.

[VI] Temperature sensors

5. Using the individual printout, verify that elements 1090 through 1180 are within the values specified on TDS 26 (sheets 1 and 2). Record pass or fail.

3.2.4.3.4.3 Cold cal mode. The digital-A data output, in cold-cal mode, shall be tested as follows:

1. Execute commands as necessary to obtain the following configuration:

COMMANDS					
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	YES	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	NO	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

[I], [II] and [III] Sync, Unit ID, and Digital "B" data

2. Using Page 1 of the printout, verify that elements 0001 through 0008 are within the required values specified in TDS 27. Record pass or fail.

NOTE

To verify the following steps, the operator may print out the individual parameters by using AE-26157 and attach the data to each TDS.

[IV] Reflector position

3. Using the individual printout, verify that there is no "E" ERROR Flag (for S/N 102 through 104) on the computer printout for steps 4a, 4b, 4c, and 4d. For S/N 105 and up, verify that position values are within ± 10 counts from requirement provided in TDS 6, AE-26002/1.

4. To test the cold cal reflector position, perform the following substeps:

   a. Using AE-26157; select reflector position screen, execute PRINT [2] SCREEN ONLY, and attach the data to TDS 28. Verify that there is no "E" ERROR Flag (for S/N 102 through 104) on the computer printout. Record pass or fail on TDS 28. For S/N 105 and up, verify that position values are within ± 10 counts from requirement provided in TDS 6, AE-26002/1.

   b. Execute commands [19] COLD CAL POSITION MSB to 0 and [20] COLD CAL POSITION LSB to 1. Repeat substep a. then proceed to substep c.

   c. Execute commands [19] COLD CAL POSITION MSB to 1 and [20] COLD CAL POSITION LSB to 0. Repeat substep a., then proceed to substep d.

   d. Execute commands [19] COLD CAL POSITION MSB to 1 and [20] COLD CAL POSITION LSB to 1. Repeat substep a., then proceed to substep e.

   e. Execute commands [19] COLD CAL POSITION MSB to 0 and [20] COLD CAL POSITION LSB to 0.

[V] Radiometric data

5. Using the individual printout, verify that the data are within the values specified on TDS 29. Record pass or fail.

[VI] Temperature sensors

6. Using the individual printout, verify that elements 1090 through 1180 are within the values specified on TDS 30 (sheets 1 and 2). Record pass or fail.

3.2.4.3.4.4 ***Nadir cal mode.*** The digital-A data output, in nadir-cal mode, shall be tested as follows:

1. Execute commands as necessary to obtain the following configuration:

COMMANDS					
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	YES	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	NO	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

[I], [II] and [III] Sync, Unit ID, and Digital "B" data

2. Using the individual printout, verify that elements 0001 through 0008 are within the required values specified in TDS 31. Record pass or fail.

NOTE

To verify the following steps, the operator may printout the individual parameters by using AE-26157 and attach the data to each TDS.

[IV] Reflector position

3. Using the individual printout, verify that there is no "E" ERROR Flag (for S/N 102 through 104) on the computer printout. Record pass or fail on TDS 24. For S/N 105 and up, verify that position values are within ± 10 counts from requirement provided in TDS 6, AE-26002/1

[V] Radiometric data

4. Using the individual printout, verify that the data are within the values specified on TDS 32. Record pass or fail.

[VI] Temperature sensors

5. Using the individual printout, verify that the elements 1090 through 1180 are within the values specified on TDS 33 (sheets 1 and 2). Record pass or fail.

3.2.4.3.5 ***Analog telemetry test.*** The purpose of this test is to verify that the 26 analog telemetry signals are within requirements. The purpose of the analog telemetry signals is to provide information about the functionality of the subsystems during normal operation of the unit. The analog telemetry signals shall be verified in two ways: (1) by measuring the analog telemetry signals directly at the interfacing connector and (2) by use of the STE.

3.2.4.3.5.1 ***Analog TLM signals measurements connector J6.*** Measure analog TLM signals at connector J6 as follows:

1. Configure the unit and the STE as indicated in Figure 22. Verify that unit power is off prior to the installation of the breakout boxes. To turn the unit off, select the Commands Menu and execute command [9] MODULE POWER = DISCONNECT and POWER [4] OFF. Manually turn off the STE 28 V power supply located inside the STE console.

2. Turn the unit on as follows:

   (a) Turn on the STE 28 V power supply.

   (b) On the Commands Menu, execute: POWER [4] ON and [9] MODULE POWER = CONNECT. Verify the display is as follows.

		COMMANDS			
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	YES	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

3. Using the "28 V Analog Telemetry Bus Return" (J1-10) as a reference ground, measure and record the six temperature sensor voltages in the order specified on TDS 34.

4. Using the "Signal Ground" (J2-03) as a reference ground, measure and record the remaining analog telemetry voltage levels in the order specified on TDS 34.

5. Leave the unit on in preparation for the next test.

3.2.4.3.5.2 ***Analog TLM signal measurements using the STE.*** Analog TLM signal measurements using the STE shall be taken as follows:

1. Using the individual printout, verify that the data matches the values specified on TDS 35. Record pass or fail.

2. Attach computer individual printout to TDS 35.

3.2.4.3.6 ***Test point verification.*** The purpose of this test is to verify the performance of the integrator and its associated clock pulses. Figure 2 shows the integration waveform and the clock signals. Test point verification consists of the following parameters:

a. Integration/Hold and Dump Clock Signals. (3.2.4.3.6.1) (Time and amplitude)

b. Integration Time (Analog Output). (3.2.4.3.6.2) (Time and amplitude for all 13 channels.)

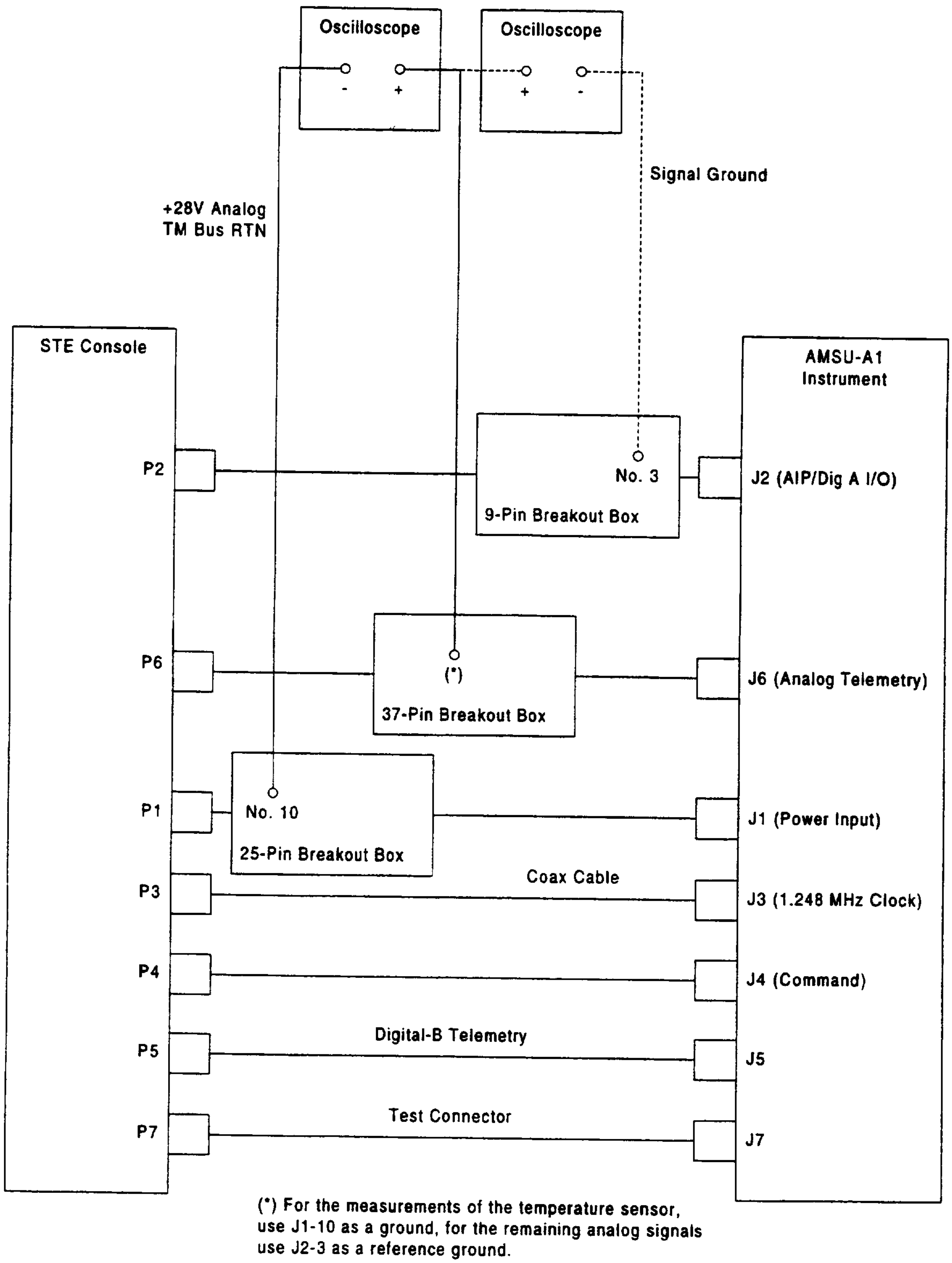


Figure 22. Analog Telemetry Signal Verification Test Setup

3.2.4.3.6.1 ***Integration/hold and dump clock signals***. The integration/hold and dump clock signals shall be tested as follows:

1. Referring to Figure 23, configure the oscilloscope as follows:

   (a) Channel-2 to J7-06 dump clock signal.

   (b) Channel-1 to J7-24 integration/hold clock signal.

   (c) Channel-1 (shielded cable) to J7-05 (I/H and Dump RTN).

   (d) Internal trigger mode to channel-1.

   (e) Amplitude and Time optimized for best resolution.

2. Photograph or plot the oscilloscope display and attach the photograph or plot to TDS 36.

3. From the photograph or plot, measure time and amplitude for the integrate/hold and dump clock signals. Verify that the data obtained are within the requirements specified on TDS 36 and Figure 2.

4. Leave the equipment in place and the unit turned on in preparation for the next test.

3.2.4.3.6.2 ***Integration time (analog outputs)***. The analog outputs integration time shall be tested as follows:

1. Reconfigure the test equipment as indicated in Figure 24.

2. Connect the oscilloscope, channel-2 positive line to J7-XX of the 37-pin breakout box. Where: XX indicates the pinout distribution for all the 13 channels as shown in Table III.

3. Start with the first channel of the above list. Adjust the oscilloscope for best amplitude and time resolution. The displayed signals should look like Figure 2.

4. Photograph or plot the display and attach it to the corresponding TDS (TDSs 37 through 43).

5. From the photograph or plot, measure the integration time and the amplitude. Verify that the data obtained is within the requirements specified in TDSs 37 through 43.

6. Repeat steps 2 through 5 to measure the integration time (analog output) for the remaining channels.

7. Leave the unit turned on and the test equipment in place in preparation for the next test.

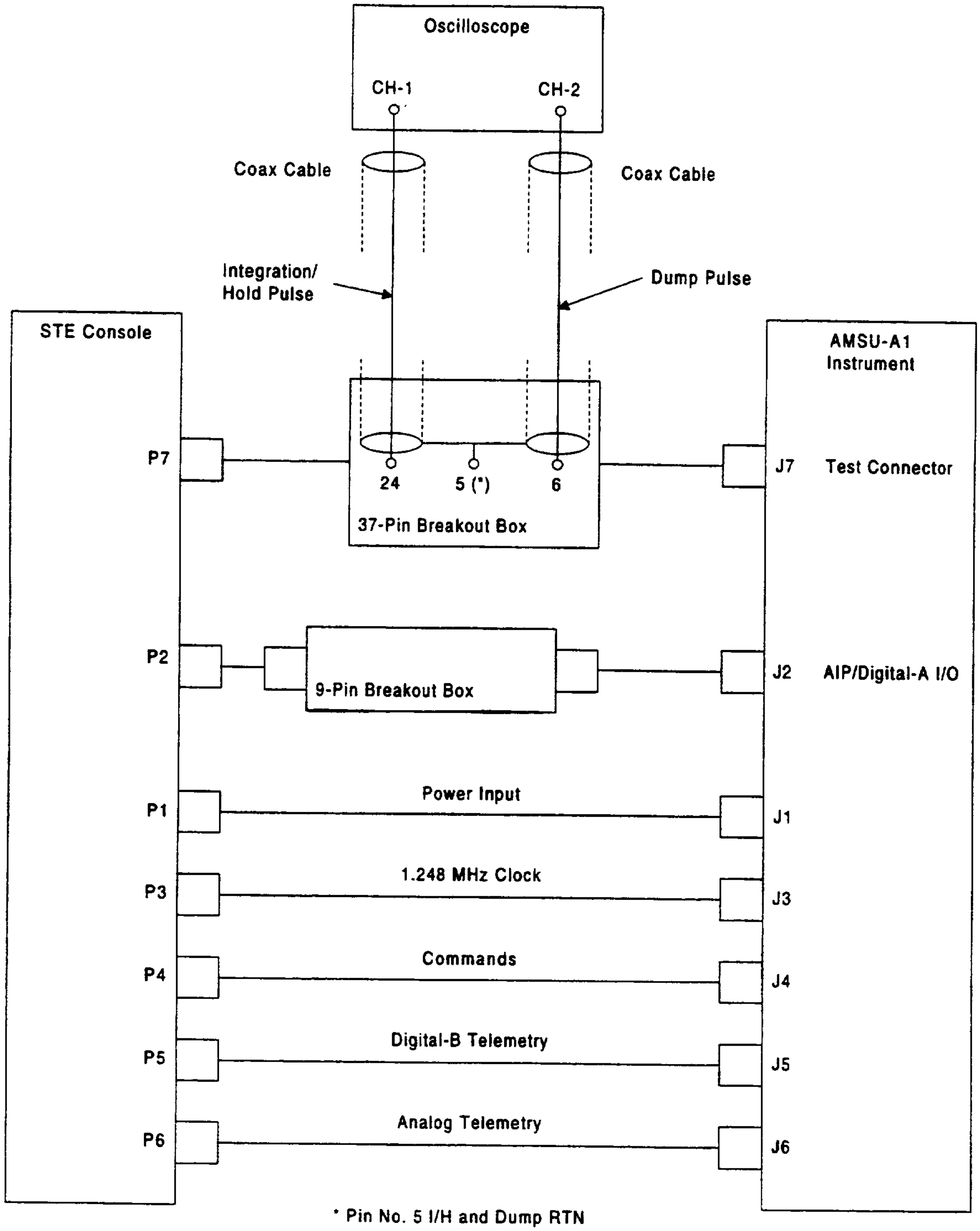


Figure 23. Integration/Hold and Dump Signals Verification Test Setup

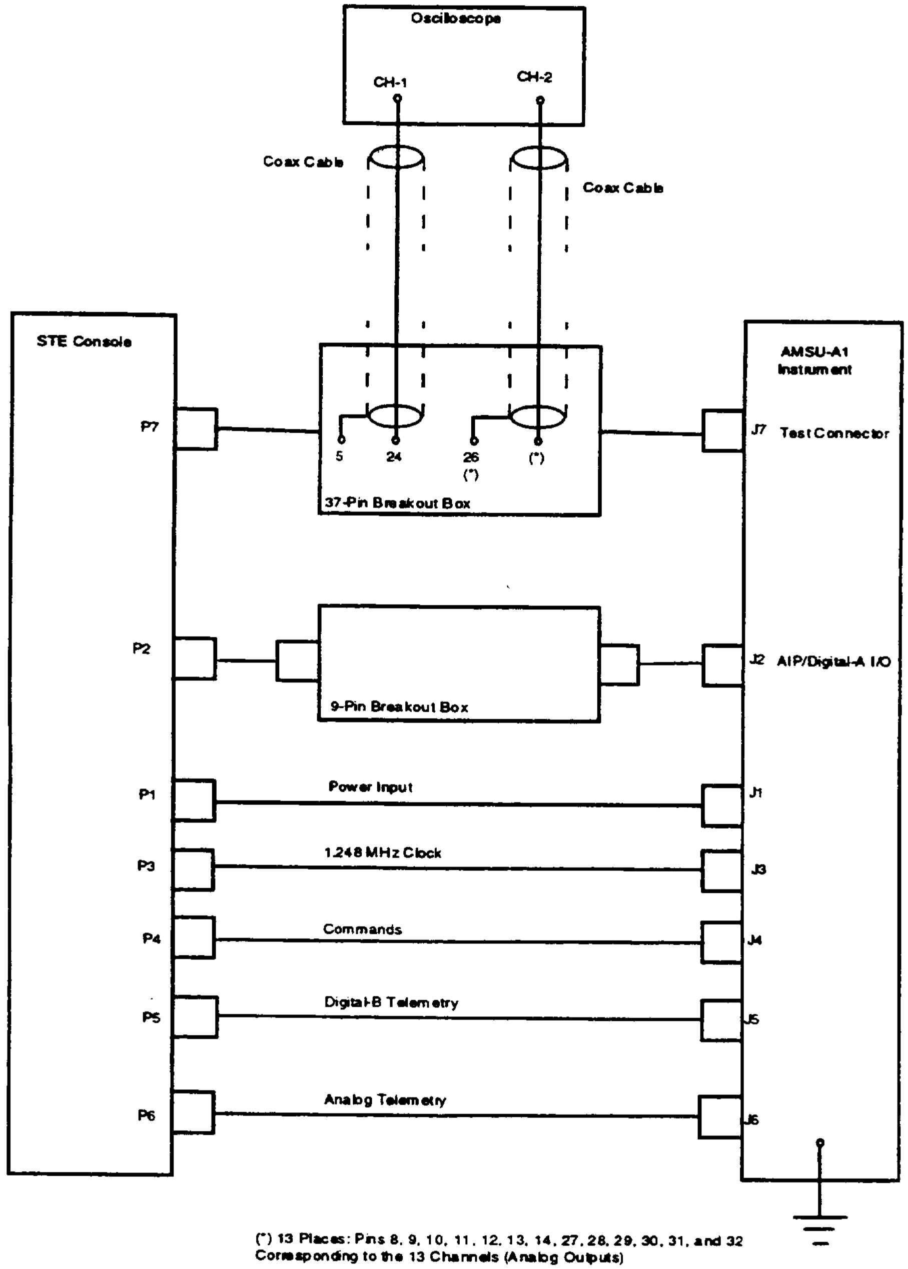


Figure 24. Integration Time (Analog Output) Verification Setup

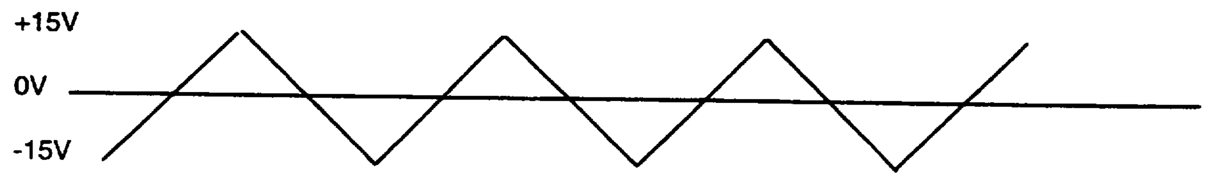
3.2.4.3.6.3 ***PLLO No. 1 verification.*** The PLLO No. 1 shall be verified as follows:

1. Reconfigure the oscilloscope as indicated in Figure 25. Connect the oscilloscope channel-1 to J7-22 (PLLO No. 1).

2. From the Commands Menu of the STE, verify that the PLLO is selected in PLLO No. 1 as follows:

   PLL POWER = PLLO#1 [18]

3. For S/N 101 - S/N 104, adjust the oscilloscope for best amplitude and time base. If the PLLO is locked properly, the oscilloscope will display a dc-voltage level of -15 to +15 V. Record the voltage level on TDS 44. Record PASS. (Any dc level recorded is considered PASS). If the PLLO is not locked properly, the scope will display a waveform similar to this:



   Record FAIL on TDS 44. Discontinue the test until the deficiency is corrected.

4. For S/N 105 and above, if the PLLO is locked properly, the oscilloscope will display a dc-voltage = 4.0 ±1 V. If the PLLO is not locked, the oscilloscope will display a dc-voltage of +0.61 ±0.30 V. If PLO is OFF, the oscilloscope will display a dc-voltage of 0.0 ±0.2 V. If the PLLO is trying to acquire lock, the oscilloscope will display a various dc level. Record the voltage level on TDS 44.

Table III. Location and Frequency of Channel 3 through 15 Analog Outputs

Breakout Box Pin Location	Channel Distribution	Frequency
J7-08	Channel-03 Analog Output	50.3 GHz
J7-09	Channel-04 Analog Output	52.80 GHz
J7-10	Channel-05 Analog Output	53.596 GHz
J7-11	Channel-06 Analog Output	54.400 GHz
J7-12	Channel-07 Analog Output	54.940 GHz
J7-13	Channel-08 Analog Output	55.500 GHz
J7-14	Channel-09 Analog Output	57.290 GHz PLLO
J7-27	Channel-10 Analog Output	57.290 GHz PLLO
J7-28	Channel-11 Analog Output	57.290 GHz PLLO
J7-29	Channel-12 Analog Output	57.290 GHz PLLO
J7-30	Channel-13 Analog Output	57.290 GHz PLLO
J7-31	Channel-14 Analog Output	57.290 GHz PLLO
J7-32	Channel-15 Analog Output	89.000 GHz

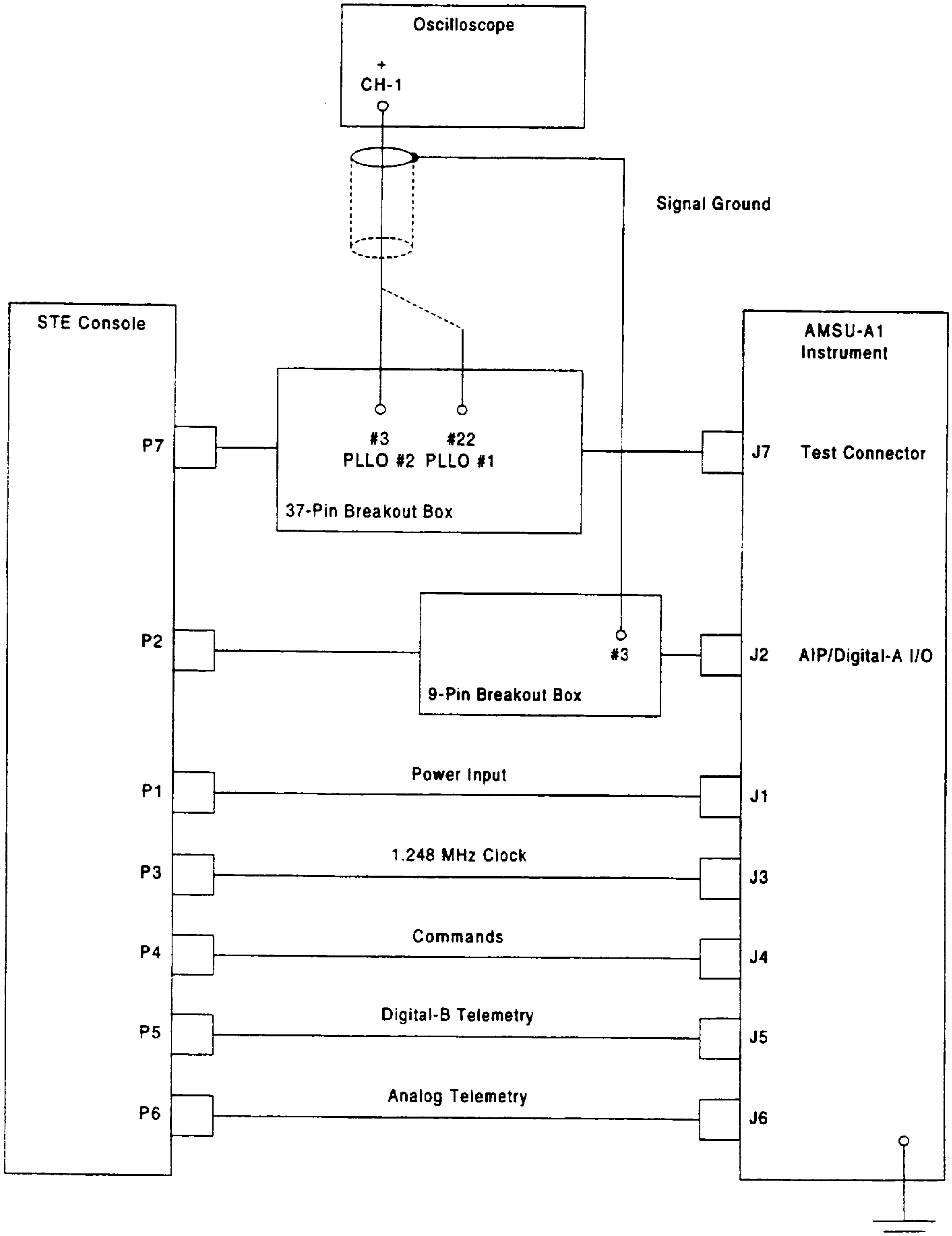


Figure 25. PLLO No. 1/No. 2 Test Setup

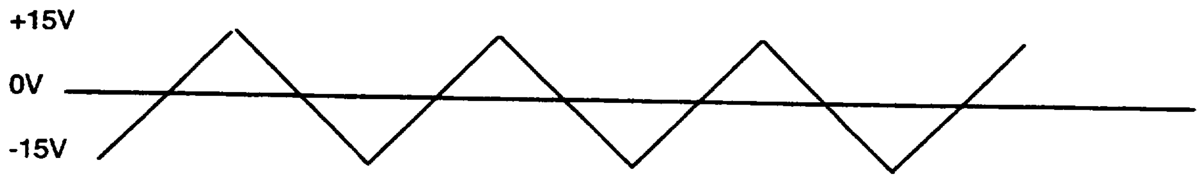
3.2.4.3.6.4 ***PLLO No. 2 verification***. The PLLO No. 2 shall be verified as follows:

1. Reconfigure the oscilloscope as indicated in Figure 25. Connect the oscilloscope channel-1 to J7-03 (PLLO No. 2).

2. Select the PLLO No. 2 unit by executing the following command:

   [18] PLL POWER = PLLO#2

3. For S/N 101 - S/N 104, adjust the oscilloscope for best amplitude and time base. If the PLLO is locked properly, the oscilloscope will display a dc-voltage level of -15 to +15 V. Record the voltage level on TDS 44. Record pass. (Any dc level recorded is considered PASS). If the PLLO is not locked properly, the scope will display a waveform similar to this:



   Record FAIL on TDS 44. Discontinue the test until the deficiency is corrected.

4. For S/N 105 and above, if the PLLO is locked properly, the oscilloscope will display a dc-voltage = 4.0 ±1 V. If the PLLO is not locked, the oscilloscope will display a dc-voltage of +0.61 ±0.30 V. If PLO is OFF, the oscilloscope will display a dc-voltage of 0.0 ±0.2 V. If the PLLO is trying to acquire lock, the oscilloscope will display a various dc level. Record the voltage level on TDS 44.

5. Return to PLLO No. 1 by executing: PLL POWER = PLLO#1 [18]

6. Leave the unit turned on in preparation for the next test.

3.2.4.3.7 ***GSE mode verification***. The purpose of this test is to verify the data obtained from the Ground Support Equipment (GSE), the following modes shall be evaluated. These modes are used for engineering evaluation only.

GSE-1 (Position: 10, 10, 10)

GSE-2 (Position: 1)

GSE-3 (Position: current)

GSE-4 (Position: 30)

GSE-5 (Position: 6)

GSE-7 (Position: required)

For GSE mode-1, the following parameters are subject to pass or fail criterion:

[I] Sync. sequence

[II] Unit ID and serial number

[III] Digital-B serial data verification

[IV] Reflector positions

[V] Radiometric data (Scene data) (Radiometric data will be limited to two channels only, channels 9 and 3. Channel 9 is physically located at the high bay of the sensor (A1-1 location) and channel 3 is located at the lower bay of the sensor (A1-2 location).

[VI] Temperature sensors.

For GSE 2 through 7, only the following parameters are subject to pass or fail criterion:

[IV] Reflector position.

[V] Radiometric data.

NOTE

Verification of GSE modes 2 through 7 are not required for the protoflight and flight instrument sensors since the modes are not used.

3.2.4.3.7.1 ***Equipment preparation and instrument turn-on procedure.*** To place instrument in GSE mode, proceed as follows:

1. Configure the test equipment as indicated in Figure 26.

2. Turn the unit on. Execute commands as necessary to obtain the following configuration:

COMMANDS					
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	NO	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	NO	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON				RETURN	[1]

Wait at least 18 seconds until the sending commands are acknowledged by the STE. At this point, the unit should be in the NO MODE with the STE collecting data.

3. Obtain a printout (9 pages) for all of the parameters ([I] through [VI]) described in 3.2.4.3.7 as follows:

   (a) On Commands Menu, press: RETURN [1].

   (b) On Main Menu, select: [10] SELF TEST.

   (c) On Self Test Menu, select: [7] RUN GSE MODE.
   (The computer will prompt: Enter GSE mode {0 to 15}.)

   (d) Select corresponding GSE mode under test.

   (e) Press PRINT [3] FULL. The computer will start printing all 9 pages.

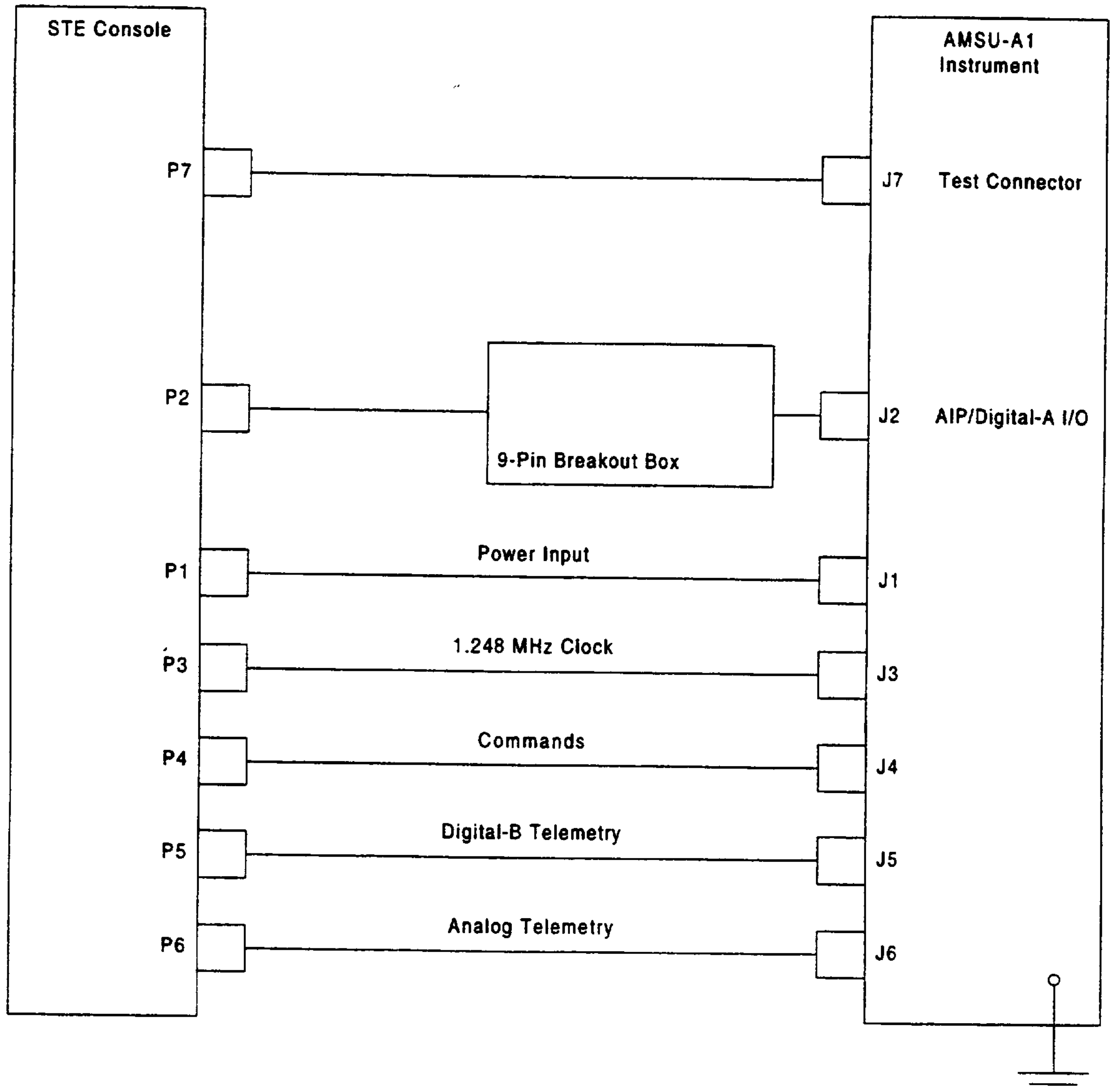


Figure 26. GSE Modes Verification Test

3.2.4.3.7.2 *GSE Mode-1*. The GSE mode-1 shall be tested as follows:

[I], [II], and [III] Sync, Unit ID, and Digital-B

1. Using the printout, verify that elements 1 through 8 are within the values specified on TDS 45. Record pass or fail.

NOTE

To verify the following steps, the operator may printout the individual parameters by using AE-26157 and attach the data to each TDS.

[IV] Reflector Positions

2. Using the individual printout, verify that the reflector positions are within the values specified in AE-26002/1, TDS 5 and 6. Record pass or fail on TDS 46.

[V] Radiometric Data

3. Using the individual printout, verify that the radiometric data are within the values specified on TDS 47.

[VI] Temperature Sensors

4. Using the individual printout, verify that elements 1090 through 1180 are within the values specified on TDS 48 (sheets 1 and 2). Record pass or fail.

3.2.4.3.7.3 *GSE Mode-2*. The GSE Mode-2 shall be tested as follows:

1. Obtain a printout (9 pages) for all of the parameters ([I] through [VI]) described in 3.2.4.3.7 as follows:

   (a) Return to the Main Menu by pressing: RETURN [1].

   (b) On Main Menu, select: [10] SELF TEST.

   (c) On Self Test Menu, select: [7] RUN GSE MODE.
   (The computer will prompt: Enter GSE mode {0 to 15}.)

   (d) Select GSE mode 2 at the prompt.

   (e) Press PRINT [3] FULL. The computer will start printing all 9 pages.

NOTE

To verify the following step, the operator may print out the individual parameters by using AE-26157 and attach the data to each TDS or the 9 full page printout may be used.

[IV] Reflector Positions

2. Using Pages 1 through 6 of the printout, verify that the reflector positions are within the values specified in AE-26002/1, TDS 5 and 6. Record pass or fail on TDS 46.

3.2.4.3.7.4 ***GSE Mode-3***. The GSE Mode-3 shall be tested as follows:

1. Obtain a printout (9 pages) for all of the parameters ([I] through [VI]) described in 3.2.4.3.7 as follows:

   (a) Return to the Main Menu by pressing: RETURN [1].

   (b) On Main Menu, select: [10] SELF TEST.

   (c) On Self Test Menu, select: [7] RUN GSE MODE.
   (The computer will prompt: Enter GSE mode {0 to 15}.)

   (d) Select GSE mode 3 at the prompt.

NOTE

To verify the following step, the operator may printout the individual parameters by using AE-26157 and attach the data to each TDS or the 9 full page printout may be used.

[IV] Reflector Positions

2. Verify that both A1-1 and A1-2 reflectors increment one step every eight seconds.

3.2.4.3.7.5 ***GSE Mode-4***. The GSE Mode-4 shall be tested as follows:

1. Obtain a printout (9 pages) for all of the parameters ([I] through [VI]) described in 3.2.4.3.7 as follows:

   (a) Return to the Main Menu by pressing: RETURN [1].

   (b) On Main Menu, select: [10] SELF TEST.

   (c) On Self Test Menu, select: [7] RUN GSE MODE.
   (The computer will prompt: Enter GSE mode {0 to 15}.)

   (d) Select GSE mode 4 at the prompt.

   (e) Press PRINT [3] FULL. The computer will start printing all 9 pages.

NOTE

To verify the following step, the operator may printout the individual parameters by using AE-26157 and attach the data to each TDS or the 9 full page printout may be used.

[IV] Reflector Positions

2. Using pages 1 through 6 of the printout, verify that the reflector positions are within the values specified in AE-26002/1, TDS 5 and 6. Record pass or fail on TDS 46.

3.2.4.3.7.6 ***GSE Mode-5***. The GSE Mode-5 shall be tested as follows:

1. Obtain a printout (9 pages) for all of the parameters ([I] through [VI]) described in 3.2.4.3.7 as follows:

   (a) Return to the Main Menu by pressing: RETURN [1].

(b) On Main Menu, select: [10] SELF TEST.

(c) On Self Test Menu, select: [7] RUN GSE MODE.
(The computer will prompt: Enter GSE mode {0 to 15}.)

(d) Select GSE mode 5 at the prompt.

(e) Press PRINT [3] FULL. The computer will start printing all 9 pages.

NOTE

To verify the following step, the operator may printout the individual parameters by using AE-26157 and attach the data to each TDS or the 9 full page printout may be used.

[IV] Reflector Positions

2. Using pages 1 through 6 of the printout, verify that the reflector positions are within the values specified in AE-26002/1, TDS 5 and 6. Record pass or fail on TDS 46.

3.2.4.3.7.7 ***GSE Mode-7***. The GSE Mode-7 shall be tested as follows:

1. Obtain a printout (9 pages) for all of the parameters ([I] through [VI]) described in 3.2.4.3.7 as follows:

(a) Return to the Main Menu by pressing: RETURN [1].

(b) On Main Menu, select: [10] SELF TEST.

(c) On Self Test Menu, select: [7] RUN GSE MODE.
(The computer will prompt: Enter GSE mode {0 to 15}.)

(d) Select GSE mode 7 at the prompt.

(e) Press PRINT [3] FULL. The computer will start printing all 9 pages.

NOTE

To verify the following steps, the operator may printout the individual parameters by using AE-26157 and attach the data to each TDS or he may use the 9 page full printout.

[IV] Reflector Positions

2. Using pages 1 through 6 of the printout, verify that the reflector positions are within the values specified in AE-26002/1, TDS 5 and 6. Record pass or fail on TDS 46.

3. Set the STE to GSE MODE-0, failure to do so will cause the STE to produce faulty data when in normal mode. To enter GSE-MODE-0 into the computer:

(a) Return to the Main Menu by pressing: RETURN [1].

(b) On Main Menu, select: [10] SELF TEST.

(c) On Self Test Menu, select: [7] RUN GSE MODE.
(The computer will prompt: Enter GSE mode {0 to 15}.)

(d) Select GSE mode 0.

3.2.4.4 ***Radiometer functional test***. The purpose of the radiometer functional test is to verify the performance of the AMSU-A1 radiometer at the system level. This test shall consist of the following subtests:

a. PLLO frequency measurements 3.2.4.4.1

b. Relative NEΔT measurements 3.2.4.4.2

3.2.4.4.1 ***PLLO frequency measurements***. Measure the PLLO frequencies as follows:

1. Prepare the unit and the test equipment as indicated in Figure 27. Frequency verification for the receiver shall be performed on the following frequency (see Figure 28 for sample plot):

   (A1-1) Ch-9,10,11,12,13 and 14: 57.290344 GHz (PLLO No. 1 and PLLO No. 2)

2. Turn on the unit by using the procedure stated in 3.2.3.5. Allow not less than one hour for the equipment to warm-up and for the unit to stabilize.

   On the Commands Menu, execute the following commands:

   (a) [14] ANTENNA WARM CAL POS = NO

   (b) [15] ANTENNA COLD CAL POS = NO

   (c) [16] ANTENNA NADIR POS = YES

   (d) [17] ANTENNA FULL SCAN MODE = NO

3. Record the measured frequencies on TDS 49, and plotter data. Repeat step 2 for PLLO No. 2.

4. Remove the test equipment but leave the unit on in preparation for the next test.

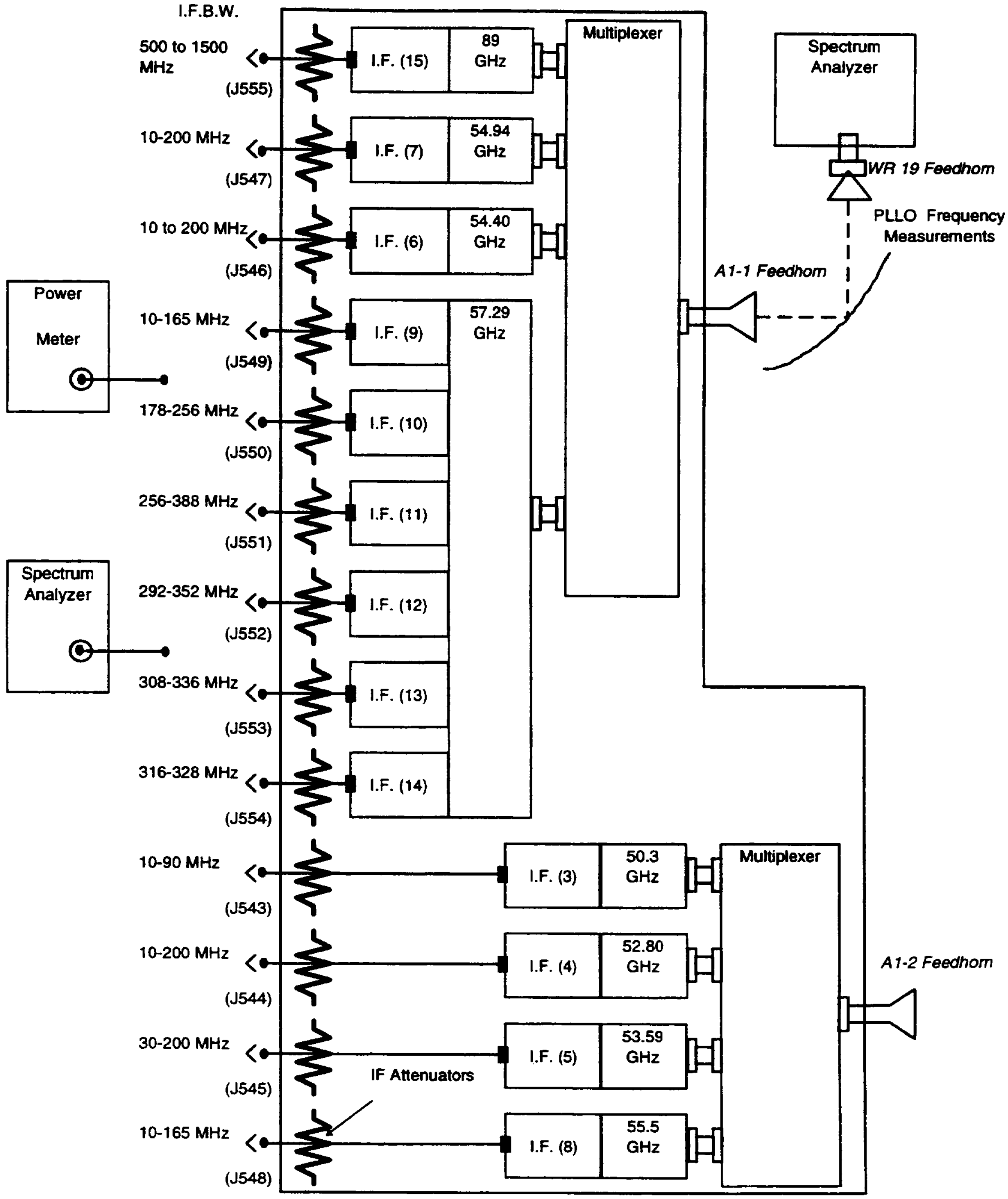


Figure 27. Configuration for RF Measurements

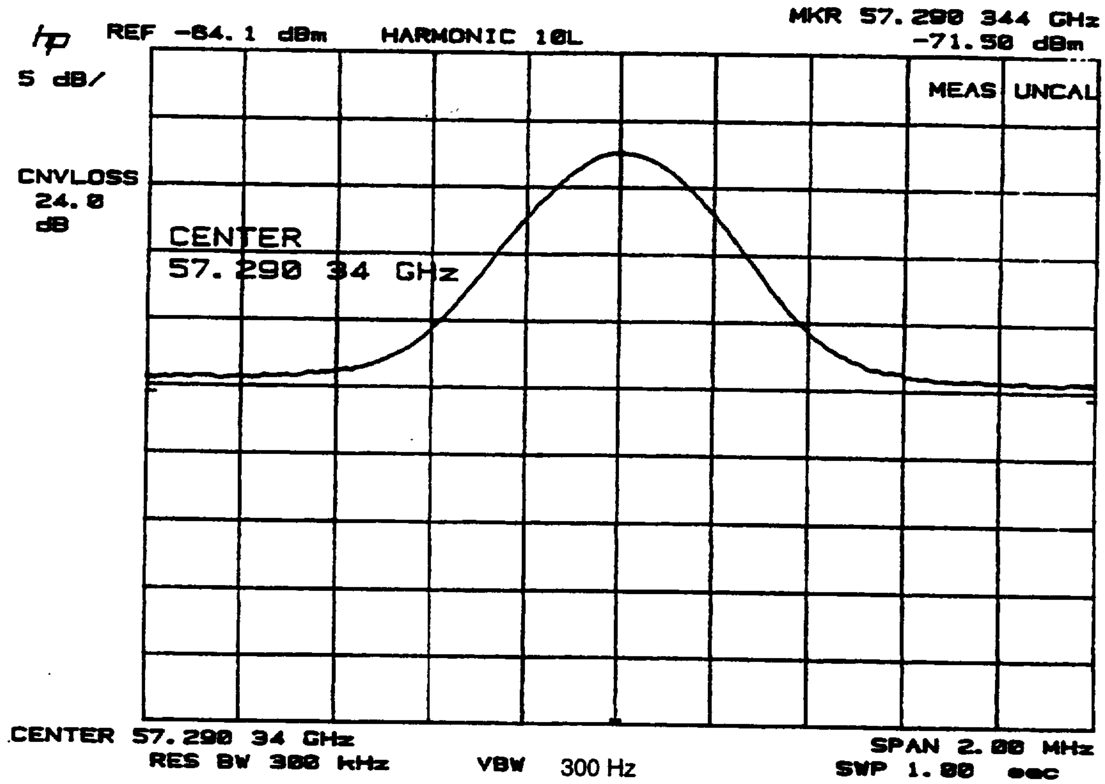


Figure 28. Sample Plot

3.2.4.4.2 ***Relative radiometer NEΔT measurements***. The purpose of this test is to perform a preliminary evaluation of the radiometer NEΔT at a system level. Since the STE is not in the thermal-vacuum configuration, no temperature readings from the cold load are available. To compute the NEΔT for this test, the temperature used for the cold load shall be LN_2 temperature.

The data obtained from this test are considered as relative NEΔT and are to be used as a diagnostic tool to verify proper operation of the A/D converters and the spacecraft interface.

The equation to determine relative NEΔT is as follows:

$$NE\Delta T = \frac{[SD \times (Th - Tc)]}{M - N}$$

where:

SD	=	Standard deviation of 120 samples at hot temperature (warm load)
Th	=	Standard room temperature = 300 K
Tc	=	Standard LN_2 temperature = 80 K
M	=	Average of hot counts (120 samples)
N	=	Average of cold counts (30 samples)

The sequence of testing shall be as follows:

a. Equipment preparation and setup configuration

b. Warm load radiometric data

c. Cold load radiometric data

d. Relative NEΔT data collection

3.2.4.4.2.1 ***Equipment preparation and setup configuration***. The equipment shall be set up as follows:

WARNING

The use of liquid nitrogen in a confined poorly ventilated area can cause asphyxiation and death due to a lack of oxygen (oxygen concentration below 20 percent). Accidental contact with liquid nitrogen will cause severe frostbite to the eyes or skin. When handling liquid nitrogen, personnel shall observe the following safety precautions:

a. Ensure that the work area is well ventilated to prevent excessive gas buildup.

b. To protect your eyes always wear a face shield or safety goggles (safety glasses without side shields do not provide adequate protection).

c. To protect exposed skin, always wear an apron when pouring LN2 and whenever exposed to LN2, always wear a lab coat, gloves made for cryogenic work, cuffless trousers (worn outside the boots or shoes), and safety shoes.

d. Do not fill target fuller than 1.0 inch from the top. Fill target at the floor level, away from unit.

e. Do not move filled target without cover in place.

1. Configure the test equipment and the unit as indicated in Figure 29, except for the cold loads.

2. Execute commands as necessary to obtain the following configuration:

COMMANDS					
[9]	MODULE POWER =	CONNECT	ANTENNA IN COLD CAL POS =	NO	[15]
[10]	SURVIVAL HTR PWR =	OFF	ANTENNA IN NADIR POS=	NO	[16]
[11]	MODULE TOTALLY OFF =	ON	ANTENNA FULL SCAN MODE =	NO	[17]
[12]	SCANNER A1-1 POWER =	ON	PLL POWER =	PLLO#1	[18]
[13]	SCANNER A1-2 POWER =	ON	COLD CAL POSITION MSB =	ZERO	[19]
[14]	ANTENNA WARM CAL POS =	YES	COLD CAL POSITION LSB =	ZERO	[20]
POWER [4] ON					

3. Allow 30 minutes for the unit to stabilize.

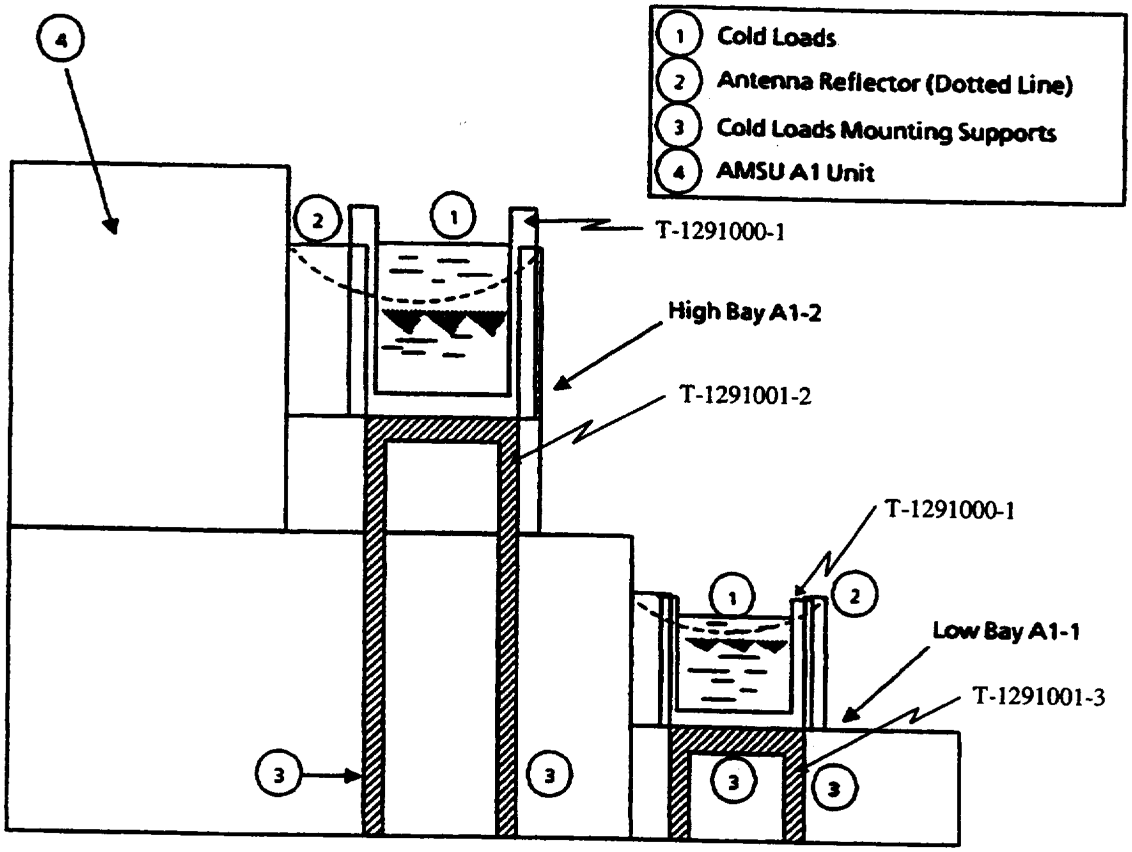


Figure 29. NEΔT Setup Configuration

3.2.4.4.2.2 ***Relative NEΔT data collection***

1. Return to the Main Menu by pressing [1] RETURN.

2. On the Main Menu, select [13] FUNCTIONAL TEST. (The STE will automatically command the unit to position the antenna reflector to the warm and cold loads as it is taking data.)

3. Wait approximately one minute to verify that the NEΔT results are displayed on the screen. Obtain a printout. Repeat step 2 four times and obtain four additional printouts. Average NEΔT from these five data points. Enter the values on TDS 50. Attach the printout to the data sheet.

4. Repeat steps 1, 2, and 3 for the PLLO No. 2. Allow 30 minutes for the unit to stabilize after switching to PLLO No. 2.

5. Remove the cold loads and associated hardware.

3.2.4.5 ***Channel identification test***. The purpose of the channel identification test is to verify the proper final configuration /assembly of each radiometer channel from antenna input to the spacecraft interface.

1. Configure the unit and test equipment as shown in Figures 26 and 32.

2. Connect the STE to instrument using the following STE interface cables.

a. STE interface cable J1 (1356648-1)
b. STE interface cable J2 (1356648-2)
c. STE interface cable J3 (1356648-3)
d. STE interface cable J4 (1356648-4)

3. Follow the turn-on procedure per para. 3.2.3.5.

4. Enter the STE command "SCANNER A1-1 POWER." Wait 18 seconds before issuing the next command.

5. Enter the STE command "SCANNER A1-2 POWER." Wait 18 seconds before issuing the next command.

6. Enter the STE command "ANTENNA COLD CAL." Wait 18 seconds before issuing the next command. Both reflectors should scan to the cold calibration beam position.

7. Enter the STE command "[1] RETURN" to return to the monitor only screen.

8. Enter the STE command "[10] DIGITAL-A." The STE should now display the digital-A data screen shown in Figure 30. From this screen enter the STE command "[9] BEAM POSITION NN-ALL CHANNELS."

9. The STE then asks "ENTER BEAM POSITION NO (1 TO 30)." Enter "30" to show the radiometric counts data for channels 3-15. The STE should now display the radiometric data screen shown in Figure 31, except with a different set of count data.

10. Allow the instrument to stabilize for approximately 20 minutes. Enter the STE command "[2]" to obtain a screen only printout.

11. Configure the unit and test equipment as shown in Figure 32. Turn ON the sweeper and allow to warm up approximately 10 minutes. Make sure that the RF power is OFF during sweeper warm up.

CAUTION

> Extreme care must be used when turning on RF power. When RF power is first applied the multiplier/gain horn should be approximately three to four feet from the unit. The RF power setting should be no greater than -20 dBm.

12. Set the sweeper frequency to 50.35 ±0.01 GHz and set the RF power level to -20 dBm. Position the multiplier/gain horn three to four feet from the instrument so that the A1-2 antenna and gain horn are approximately aligned (see Figure 32). Rotate the gain horn, if needed, to the vertical polarization position.

13. Turn ON the RF power making sure the power level is set to -20 dBm. Allow the multiplier to warm up approximately five minutes.

14. At the STE screen compare the radiometric data counts of channel 3 to the counts printed out at step 10. Enter the STE command "[2]" to obtain a screen only printout.

15. From the printouts obtained in steps 10 and 14, verify that the radiometric data counts for channel 3 have increased significantly, approximately 1000 or more, and that the other channels' data counts have remained relatively unchanged, less than 300 counts.

16. Record the counts difference on TDS 52 of channel 3 from the printouts obtained in steps 10 and 14 and attach printouts to TDS 52.

17. Repeat steps 12 through 16 for the frequencies and polarizations listed on TDS 52.

18. After all A1 channels have been identified, turn OFF the RF power. Return the reflectors to the warm cal position.

19. Turn the STE Q/Main and N/Pulse switches to OFF.

20. Turn the STE power supply panel main power switch OFF.

EOS	A1-03 E1.EXE;31 COLD CAL MODE			P15-JUN-98	09:36:59 SCAN NUMBER 34
[5]	SCIENCE DATA	ELEMENT	0000		
[6]	CONTROL/STATUS	ELEMENT	00		
[7]	ENGINEERING	ELEMENT	00		
[8]	DATA STREAM (64 VALUES)				
[9]	BEAM POSITION NN-ALL CHANNELS				
[10]	CHANNEL NN -ALL BEAM POSITIONS				
[11]	WARM CALIBRATE				
[12]	COLD CALILBRATE				
[13]	REFLECTOR POSITIONS				
[14]	TEMPERATURE DATA (16 VALUES)				
ENGR OK	POWER	ON	CHECKSUM IN 15A1 SA28	34SA29	47
SELECT BUTTON 2		SCREEN ONLY [2]	PRINT [3]	FULL	[1] RETURN

Figure 30. Digital-A Data Screen

EOS   A1-03 E1.EXE;31 COLD CAL MODE   P15-JUN-98   09:49:07 SCAN NUMBER 11

[5] SCIENCE DATA ELEMENT 0000

[6] CONTROL/STATUS ELEMENT 00

[7] ENGINEERING ELEMENT 00

RADIOMETRIC DATA

BEAM POSITION

CH	DATA	CH	DATA	CH	DATA
3	15798	8	15414	13	15811
4	16252	9	16176	14	16029
5	15661	10	16010	15	15102
6	16413	11	15639		
7	18044	12	15817		

[21] UP   [22] DOWN

ENGR OK POWER ON CHECKSUM IN DF5D CALC DFSD SA28 11 SA29 14

SELECT BUTTON 2

Figure 31. Radiometric Data Screen

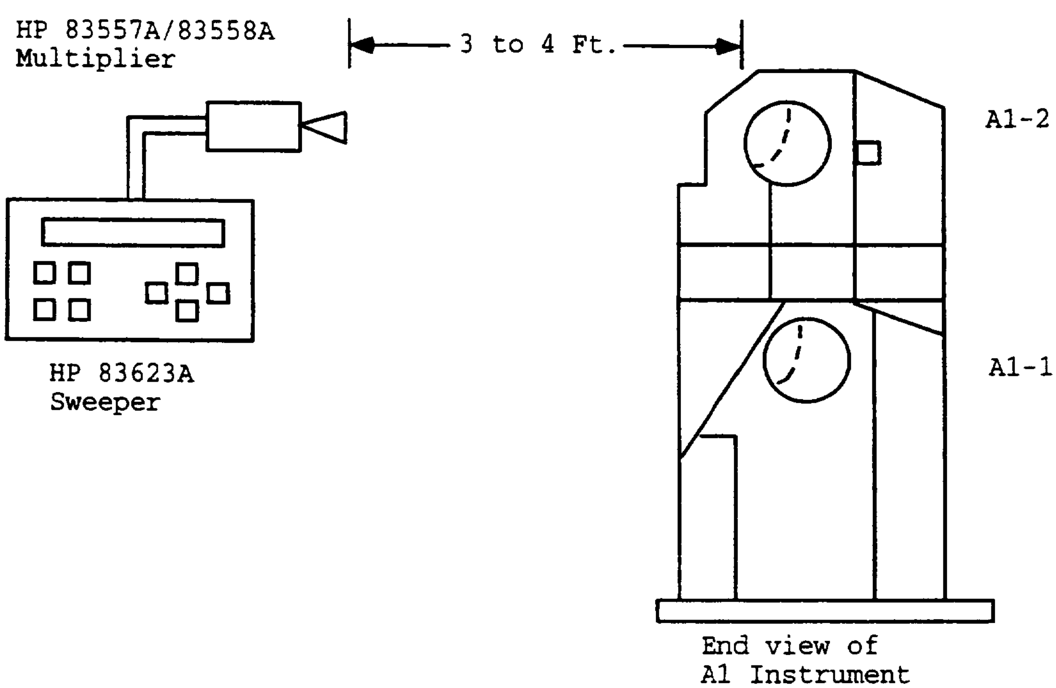


Figure 32. Channel Identification Setup

4. QUALITY ASSURANCE PROVISIONS

4.1 ***Responsibility for inspection***. Aerojet Quality Assurance shall inspect in accordance with the requirements of this test procedure and S-480-79 and S-480-80. Quality Control shall verify all test set-ups prior to start of test. Bonded software shall be used for all tests and shall be obtained from Quality Control. Quality Control shall review all test data for conformance to success criteria. The test data shall include test limits. For tests that satisfy requirements from S-480-80 on protoflight and flight units, customer representatives shall be invited to monitor tests and shall be invited to review the data and show approval on the test data sheets.

4.1.1 ***Test facilities***. Unless otherwise specified, the examinations and tests described herein shall be conducted at GenCorp Aerojet, Azusa Operations, Azusa, CA.

4.1.2 ***Electrostatic Device (ESD) handling***. All electronic hardware shall be handled in accordance with Aerojet Standard STD-2454.

4.2 ***Monitoring procedures***. All tests in this procedure shall be monitored by quality control.

4.2.1 ***Test equipment***. Test equipment calibration procedures shall comply with the requirements of MIL-STD-45662.

4.2.2 ***Software***. Bonded software shall be used at all times.

4.3 ***Monitoring procedures for materials***. Not applicable.

4.4 ***Certification***. Certification for handling ESD-sensitive equipment is required for all personnel working on the assembly and test of the AMSU-A instrument, per STD-2454.

4.5 Test methods

4.5.1 ***Accept-reject criteria***. The accept-reject criteria for each examination or test shall be as specified in the data sheets included in each phase of the applicable test procedure. The test results shall be recorded on the data sheets to demonstrate compliance with the applicable specification requirements. Methods of analysis shall be appropriate for the parameters being inspected. It shall be the responsibility of Aerojet to review the test data and determine conformance of the unit under test to the performance requirements contained in S-480-80 and this specification.

In the event of a failure during any phase of this test procedure, the test activity shall record the required information on the Test Anomaly Record (TAR) and alert the design assurance and quality engineers. Except for failures which only represent a limited out-of-tolerance condition for a particular parameter and are not expected to interfere with the balance of the testing and which are non-destructive, the testing must be stopped until a complete description of the observed anomaly failure is documented and a Failure Analysis Strategy (FAS) is formulated, documented, and implemented to preclude loss of information or evidence that may facilitate determining the failure cause. The full set of data from the referenced tests is required in order to formulate a plan of action. The cognizant reliability engineer, quality assurance engineer, and the system or responsible test engineer shall jointly develop the FAS which must be approved by Design Assurance and Quality Assurance. Analysis and reporting shall be performed per Aerojet procedures.

4.5.2 ***General.*** All data sheets associated with the tests on the unit plus the data reduction and analysis of specific parameters required by each applicable test procedure obtained from screen printouts and plots, oscilloscope photographs, or magnetic recordings shall be included with the associated shop order. During tests in which a CRT screen is to be printed or plotted and retained as a data sheet, the following annotation shall be applied:

Test/Systems Engineer: (Signature)	____________________
Quality Control: (Signature)	____________________
Customer Representative (Flight Hardware Only):	____________________ (Signature)
Date:	____________________
Test Paragraph No.:	____________________
Subassembly/Assembly Serial No.:	____________________
Shop Order No.:	____________________

4.5.2.1 ***Test data.*** The test data shall be that which was obtained during performance of the tests specified and recorded on the Test Data Sheet(s) (TDS) (see Appendix A) and on printouts and plots and shall be attached to the shop order associated with the test.

5. PREPARATION FOR DELIVERY

This section is not applicable to this specification.

6. NOTES

6.1 *Acronyms and abbreviations*

AMSU	Advanced Microwave Sounding Unit
ATB	Analog telemetry bus
AWG	American Wire Gage
BP	Beam Position
CAL	Calibrate
CPT	Comprehensive performance test
d	delta
DC	Direct current
DVM	Digital volt meter
EMI	Electromagnetic interference
ESD	Electrostatic Sensitive Device
EXT	External
FAS	Failure analysis strategy
GHz	Gigahertz
GIIS	General Instrument Interface Specification
GND	Ground
GSE	Ground Support Equipment
HTR	Heater
kHz	Kilohertz
LPT	Limited performance test
LSB	Least significant bit
MA	Milliampere
METSAT	Meteorological Satellite
MLB	Main load bus
MFG	Manufacturer
MMW	Millimeter wave
MS, MSEC	Millisecond
MSB	Most significant bit
MV	Millivolt
NEΔT	Noise equivalent delta temperature
PFM	Protoflight Model
PLB	Pulse load bus
PLL	Phase lock loop
PLLO	Phase lock loop oscillator

POS	Position
PWR	Power
RTN	Return
STE	Special Test Equipment
SW	
TAR	Test Anomaly Record
TDS	Test Data Sheet
TLM	Telemetry
TM	Instrument Temperature
UIIS	Unique Instrument Interface Specification
Vdc	Volts, direct current
μs	Microsecond

6.2 ***Changes***. The outside margins of this document have been marked to indicate where modifications, deletions, or additions have been made since the previous issue. This is done solely as a convenience to users, who are cautioned to evaluate the requirements of this document based on the entire content as written, regardless of the marginal notations and relationship to the previous issue.

APPENDIX A

TEST DATA SHEETS

10.1 ***Scope.*** This appendix contains the test data sheets for all tests and inspections listed in section 3.

TEST DATA SHEET 1 (Sheet 1 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J1 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	+28 V MLB	> 100k		
J1-2	+28 V MLB	> 100k		
J1-3	+28 V MLB RTN	> 100k		
J1-4	+28 V MLB RTN	> 100k		
J1-5	+28 V PLB	> 100k		
J1-6	+28 V PLB	> 100k		
J1-7	+28 V PLB RTN	> 100k		
J1-8	+28 V PLB RTN	> 100k		
J1-9	+28 V TMB	> 100k		
J1-10	28 V TMB RTN	> 100k		
J1-11	NO CONNECTION	> 100k		
J1-12	NO CONNECTION	> 100k		
J1-13	CHASSIS GROUND (E1)	< 1		
J1-14	+28 V MLB	> 100k		
J1-15	+28 V MLB	> 100k		
J1-16	+28 V MLB RTN	> 100k		
J1-17	+28 V MLB RTN	> 100k		
J1-18	+28 V PLB	> 100k		
J1-19	+28 V PLB	> 100k		
J1-20	+28 V PLB RTN	> 100k		
J1-21	+28 V PLB RTN	> 100k		
J1-22	+28 V TMB	> 100k		
J1-23	28 V TMB RTN	> 100k		
J1-24	SAFETY HTR PWR	> 100k		
J1-25	SAFETY HTR RTN	> 100k		

TEST DATA SHEET 1 (Sheet 2 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

J2 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J2-1	Chassis Ground (E2)	< 1		
J2-2	DATA CLOCK (C1)	> 100k		
J2-3	Signal Return	> 100k		
J2-4	No Connection	> 100k		
J2-5	DIGITAL-A DATA OUT	> 100k		
J2-6	DATA ENABLE (A1)	> 100k		
J2-7	8 SEC SYNC PULSE	> 100k		
J2-8	No Connection	> 100k		
J2-9	No Connection	> 100k		

J3 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J3-1	1.248 MHz CLK	> 100k		
J3-2	1.248 MHz CLK RTN	> 100k		
J3-3	Chassis GND (E3)	< 1		

J5 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J5-1	Chassis Ground (E5)	< 1		
J5-2	MODULE PWR IND	> 100k		
J5-3	COLD CAL POS MSB (OUT)	> 100k		
J5-4	No Connection	> 100k		
J5-5	SCANNER A1-2 ON/OFF	> 100k		
J5-6	ANT IN COLD CAL POS	> 100k		
J5-7	PLL PRI/RED	> 100k		
J5-8	No Connection	> 100k		
J5-9	SURV HTR ON/OFF	> 100k		
J5-10	No Connection	> 100k		
J5-11	COLD CAL POS LSB (OUT)	> 100k		
J5-12	SCANNER A1-1 ON/OFF	> 100k		
J5-13	ANT IN WARM CAL POS	> 100k		
J5-14	ANT IN NADIR POS	> 100k		
J5-15	FULL SCAN MODE	> 100k		

TEST DATA SHEET 1 (Sheet 3 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J4 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J4-1	Chassis Ground (E4)	< 1		
J4-2	MODULE PWR DISCONN	> 100k		
J4-3	SURVIVAL HTR ON	> 100k		
J4-4	MODULE TOTALLY OFF	> 100k		
J4-5	SCANNER A1-2 ON/OFF	> 100k		
J4-6	ANT AT COLD CAL POS	> 100k		
J4-7	PLL SELECT	> 100k		
J4-8	ANT AT NADIR POS	> 100k		
J4-9	COLD CAL POS MSB (IN)	> 100k		
J4-10	No Connection	> 100k		
J4-11	No Connection	> 100k		
J4-12	+10 V INTERFACE BUS	> 100k		
J4-13	10 V INTERFACE BUS RTN	> 100k		
J4-14	MODULE PWR CONN	> 100k		
J4-15	SURVIVAL HTR OFF	> 100k		
J4-16	SCANNER A1-1 ON/OFF	> 100k		
J4-17	ANT AT WARM CAL POS	> 100k		
J4-18	FULL SCAN	> 100k		
J4-19	COLD CAL POS LSB (IN)	> 100k		
J4-20	No Connection	> 100k		
J4-21	No Connection	> 100k		
J4-22	No Connection	> 100k		
J4-23	No Connection	> 100k		
J4-24	+10 V INTERFACE BUS	> 100k		
J4-25	10 V INTERFACE BUS RTN	> 100k		

TEST DATA SHEET 1 (Sheet 4 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J6 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J6-1	Chassis GND (E6)	< 1		
J6-2	RF SHELF A1-1 TEMP	> 100k		
J6-3	A1-1 SCAN. MTR. TEMP	> 100k		
J6-4	WARM LOAD A1-1 TEMP	> 100k		
J6-5	No Connection	> 100k		
J6-6	PLLO RED LOCK DETECT	> 100k		
J6-7	No Connection	> 100k		
J6-8	A1-1 DRIVE MTR CURR	> 100k		
J6-9	+15 V ANT DR MON	> 100k		
J6-10	+5 V ANT DR MON	> 100k		
J6-11	+15 V SIG PROC MON	> 100k		
J6-12	+5 V SIG PROC MON	> 100k		
J6-13	L.O. VOLTAGE CH 3 MON	> 100k		
J6-14	L.O. VOLTAGE CH 5 MON	> 100k		
J6-15	L.O. VOLTAGE CH 7 MON	> 100k		
J6-16	+15 VDC PLL LO MON	> 100k		
J6-17	+10 V MIXER/AMP MON	> 100k		
J6-18	L.O. VOLTAGE CH 15 MON	> 100k		
J6-19	No Connection	> 100k		
J6-20	28 V TMB RTN	> 100k		
J6-21	RF SHELF A1-2 TEMP	> 100k		
J6-22	A1-2 SCAN MTR TEMP	> 100k		
J6-23	WARM LOAD A1-2 TEMP	> 100k		
J6-24	No Connection	> 100k		
J6-25	PLLO PRI LOCK DETECT	> 100k		
J6-26	No Connection	> 100k		
J6-27	A1-2 DRIVE MTR CURR	> 100k		
J6-28	-15 V ANT DR MON	> 100k		
J6-29	-15 V SIG PROC MON	> 100k		
J6-30	L.O. VOLTAGE CH 4 MON	> 100k		
J6-31	L.O. VOLTAGE CH 6 MON	> 100k		
J6-32	L.O. VOLTAGE CH 8 MON	> 100k		
J6-33	-15 VDC PLL LO MON	> 100k		
J6-34	+8 V IF AMP MON	> 100k		
J6-35	No Connection	> 100k		
J6-36	No Connection	> 100k		
J6-37	No Connection	> 100k		

TEST DATA SHEET 1 (Sheet 5 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J7 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J7-1	Chassis GND (E7)	< 1		
J7-2	No Connection	> 100k		
J7-3	REDUN PLO LOCK DET	> 100k		
J7-4	15 V RTN (2/3)	> 100k		
J7-5	15 V RTN (2/3)	> 100k		
J7-6	DUMP TEST POINT	> 100k		
J7-7	No Connection	> 100k		
J7-8	CH3 OUT TEST POINT	> 100k		
J7-9	CH4 OUT TEST POINT	> 100k		
J7-10	CH5 OUT TEST POINT	> 100k		
J7-11	CH6 OUT TEST POINT	> 100k		
J7-12	CH7 OUT TEST POINT	> 100k		
J7-13	CH8 OUT TEST POINT	> 100k		
J7-14	CH9 OUT TEST POINT	> 100k		
J7-15	No Connection	> 100k		
J7-16	No Connection	> 100k		
J7-17	GSE CMD LSB	> 100k		
J7-18	GSE CMD MSB-1	> 100k		
J7-19	+5 V GSE INTERLOCK A	> 100k		
J7-20	No Connection	> 100k		
J7-21	No Connection	> 100k		
J7-22	PRI PLO LOCK DET	> 100k		
J7-23	No Connection	> 100k		
J7-24	I/H TEST POINT	> 100k		
J7-25	No Connection	> 100k		
J7-26	15 V RTN (2/3)	> 100k		
J7-27	CH10 OUT TEST POINT	> 100k		
J7-28	CH11 OUT TEST POINT	> 100k		
J7-29	CH12 OUT TEST POINT	> 100k		
J7-30	CH13 OUT TEST POINT	> 100k		
J7-31	CH14 OUT TEST POINT	> 100k		
J7-32	CH15 OUT TEST POINT	> 100k		
J7-33	No Connection	> 100k		
J7-34	No Connection	> 100k		
J7-35	GSE CMD MSB	> 100k		
J7-36	5 V RTN (1)	> 100k		
J7-37	+5 V GSE INTERLOCK B	> 100k		

TEST DATA SHEET 1 (Sheet 6 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	J1-2	+28 V MLB	< 1		
J1-1	J1-14	+28 V MLB	< 1		
J1-1	J1-15	+28 V MLB	< 1		
J1-3	J1-4	28 V MLB RTN	< 1		
J1-3	J1-16	28 V MLB RTN	< 1		
J1-3	J1-17	28 V MLB RTN	< 1		
J1-5	J1-6	+28 V PLB	< 1		
J1-5	J1-18	+28 V PLB	< 1		
J1-5	J1-19	+28 V PLB	< 1		
J1-7	J1-8	28 V PLB RTN	< 1		
J1-7	J1-20	28 V PLB RTN	< 1		
J1-7	J1-21	28 V PLB RTN	< 1		
J1-9	J1-22	+28 V TMB	< 1		
J1-10	J1-23	28 V TMB RTN	< 1		
J1-10	J6-20	28 V TMB RTN	< 1		
J4-12	J4-24	+10 V INTERFACE BUS	< 1		
J4-13	J4-25	10 V INTERFACE BUS RTN	< 1		
J1-1	J1-3	+28 V MLB	> 100k		
J1-1	J1-5	+28 V MLB	> 100k		
J1-1	J1-7	+28 V MLB	> 100k		
J1-1	J1-9	+28 V MLB	> 100k		
J1-1	J1-10	+28 V MLB	> 100k		
J1-1	J1-24	+28 V MLB	> 100k		
J1-1	J1-25	+28 V MLB	> 100k		
J1-1	J2-3	+28 V MLB	> 100k		
J1-1	J4-12	+28 V MLB	> 100k		
J1-1	J4-13	+28 V MLB	> 100k		
J1-3	J1-5	28 V MLB RTN	> 100k		
J1-3	J1-7	28 V MLB RTN	> 100k		
J1-3	J1-9	28 V MLB RTN	> 100k		
J1-3	J1-10	28 V MLB RTN	> 100k		
J1-3	J1-24	28 V MLB RTN	> 100k		
J1-3	J1-25	28 V MLB RTN	> 100k		
J1-3	J2-3	28 V MLB RTN	> 100k		
J1-3	J4-12	28 V MLB RTN	> 100k		
J1-3	J4-13	28 V MLB RTN	> 100k		

TEST DATA SHEET 1 (Sheet 7 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-5	J1-7	+28 V PLB	> 100k		
J1-5	J1-9	+28 V PLB	> 100k		
J1-5	J1-10	+28 V PLB	> 100k		
J1-5	J1-24	+28 V PLB	> 100k		
J1-5	J1-25	+28 V PLB	> 100k		
J1-5	J2-3	+28 V PLB	> 100k		
J1-5	J4-12	+28 V PLB	> 100k		
J1-5	J4-13	+28 V PLB	> 100k		
J1-7	J1-9	28 V PLB RTN	> 100k		
J1-7	J1-10	28 V PLB RTN	> 100k		
J1-7	J1-24	28 V PLB RTN	> 100k		
J1-7	J1-25	28 V PLB RTN	> 100k		
J1-7	J2-3	28 V PLB RTN	> 100k		
J1-7	J4-12	28 V PLB RTN	> 100k		
J1-7	J4-13	28 V PLB RTN	> 100k		
J1-9	J1-10	+28 V TMB	> 100k		
J1-9	J1-24	+28 V TMB	> 100k		
J1-9	J1-25	+28 V TMB	> 100k		
J1-9	J2-3	+28 V TMB	> 100k		
J1-9	J4-12	+28 V TMB	> 100k		
J1-9	J4-13	+28 V TMB	> 100k		
J1-10	J1-24	28 V TMB RTN	> 100k		
J1-10	J1-25	28 V TMB RTN	> 100k		
J1-10	J2-3	28 V TMB RTN	> 100k		
J1-10	J4-12	28 V TMB RTN	> 100k		
J1-10	J4-13	28 V TMB RTN	> 100k		
J1-24	J1-25	SAFETY HTR PWR	> 100k		
J1-24	J2-3	SAFETY HTR PWR	> 100k		
J1-24	J4-12	SAFETY HTR PWR	> 100k		
J1-24	J4-13	SAFETY HTR PWR	> 100k		
J1-25	J2-3	SAFETY HTR PWR RTN	> 100k		
J1-25	J4-12	SAFETY HTR PWR RTN	> 100k		
J1-25	J4-13	SAFETY HTR PWR RTN	> 100k		
J2-3	J4-12	SIGNAL RTN	> 100k		
J2-3	J4-13	SIGNAL RTN	> 100k		
J4-12	J4-13	+10 V INTERFACE BUS	> 100k		

TEST DATA SHEET 1 (Sheet 8 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J2-2	J4-13	DATA CLOCK (C1)	> 2k		
J2-5	J4-13	DIGITAL-A DATA OUT	> 2k		
J2-6	J4-13	DATA ENABLE (A1)	> 2k		
J2-7	J4-13	8 SEC SYNC PULSE	> 2k		
J3-1	J4-13	1.248 MHZ CLK	> 2k		
J3-2	J4-13	1.248 MHZ CLK RTN	> 2k		
J4-2	J4-13	MODULE PWR DISCONN	> 2k		
J4-3	J4-13	SURVIVAL HTR ON	> 2k		
J4-4	J4-13	MODULE TOTALLY OFF	> 2k		
J4-5	J4-13	SCANNER A1-2 ON/OFF	> 2k		
J4-6	J4-13	ANT AT COLD CAL POS	> 2k		
J4-7	J4-13	PLL SELECT	> 2k		
J4-8	J4-13	ANT AT NADIR POS	> 2k		
J4-9	J4-13	COLD CAL POS MSB (IN)	> 2k		
J4-14	J4-13	MODULE PWR CONN	> 2k		
J4-15	J4-13	SURVIVAL HTR OFF	> 2k		
J4-16	J4-13	SCANNER A1-1 ON/OFF	> 2k		
J4-17	J4-13	ANT AT WARM CAL POS	> 2k		
J4-18	J4-13	FULL SCAN	> 2k		
J4-19	J4-13	COLD CAL POS LSB (IN)	> 2k		
J5-2	J4-13	MODULE PWR IND	> 2k		
J5-3	J4-13	COLD CAL POS MSB (OUT)	> 2k		
J5-5	J4-13	SCANNER A1-2 ON/OFF	> 2k		
J5-6	J4-13	ANT IN COLD CAL POS	> 2k		
J5-7	J4-13	PLL PRI/RED	> 2k		
J5-9	J4-13	SURV HTR ON/OFF	> 2k		
J5-11	J4-13	COLD CAL POS LSB (OUT)	> 2k		
J5-12	J4-13	SCANNER A1-1 ON/OFF	> 2k		
J5-13	J4-13	ANT IN WARM CAL POS	> 2k		
J5-14	J4-13	ANT IN NADIR POS	> 2k		
J5-15	J4-13	FULL SCAN MODE	> 2k		

TEST DATA SHEET 1 (Sheet 9 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J6-2	J1-10	RF SHELF A1-1 TEMP	> 2k		
J6-3	J1-10	A1-1 SCAN MTR.TEMP	> 2k		
J6-4	J1-10	WARM LOAD A1-1 TEMP	> 2k		
J6-6	J4-13	PLLO RED LOCK DETECT	> 2k		
J6-8	J4-13	A1-1 DRIVE MTR CVR	> 2k		
J6-9	J4-13	+15 VDC ANT DRIVE MON	> 2k		
J6-10	J4-13	+5 VDC ANT DRIVE MON	> 2k		
J6-11	J4-13	+15 VDC SIG PROC MON	> 2k		
J6-12	J4-13	+5VDC SIG PROC MON	> 2k		
J6-13	J4-13	L.O. VOLTAGE CH3 MON	> 2k		
J6-14	J4-13	L.O. VOLTAGE CH5 MON	> 2k		
J6-15	J4-13	L.O. VOLTAGE CH7 MON	> 2k		
J6-16	J4-13	+15 VDC PLL LO MON	> 2k		
J6-17	J4-13	+10 V MIXER/AMP MON	> 2k		
J6-18	J4-13	L.O. VOLTAGE CH15 MON	> 2k		
J6-21	J4-10	RF SHELF A1-2 TEMP	> 2k		
J6-22	J4-10	A1-2 SCAN MTR.TEMP	> 2k		
J6-23	J4-10	WARM LOAD A1-2 TEMP	> 2k		
J6-25	J4-13	PLLO PRI LOCK DETECT	> 2k		
J6-27	J4-13	A1-2 DRIVE MTR CURR	> 2k		
J6-28	J4-13	-15 VDC ANT DRIVE MON	> 2k		
J6-29	J4-13	-15 VDC SIG PROC MON	> 2k		
J6-30	J4-13	L.O. VOLTAGE CH4 MON	> 2k		
J6-31	J4-13	L.O. VOLTAGE CH6 MON	> 2k		
J6-32	J4-13	L.O. VOLTAGE CH8 MON	> 2k		
J6-33	J4-13	-15 VDC PLL LO MON	> 2k		
J6-34	J4-13	IF AMP MON	> 2k		

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative (Flight Hardware Only) Date Quality Control Date

TEST DATA SHEET 2
+28 MLB During Turn-on Transient (Paragraph 3.2.4.2.1.1)

At 28.56 Vdc:

Step	Parameter	Measured/ Calculated	Required* S/N 101-104	Required* S/N 105 & up	Pass/ Fail
7	Time to reach steady state current	_______ms	20 ms max	300 ms max	
8	Peak Current	______Amps	10.6 Amps	5.9 Amps	
10	Rate of Change (Slope): dI/dT	_____mA/μs	677 mA/μs	250 mA/μs	

At 27.44 Vdc:

Step	Parameter	Measured/ Calculated	Required* S/N 101-104	Required* S/N 105 & up	Pass/ Fail
7	Time to reach steady state current	_______ms	20 ms max	300 ms max	
8	Peak Current	______Amps	10.6 Amps	5.9 Amps	
10	Rate of Change (Slope): dI/dT	_____mA/μs	677 mA/μs	250 mA/μs	

At 28.00 Vdc:

Step	Parameter	Measured/ Calculated	Required* S/N 101-104	Required* S/N 105 & up	Pass/ Fail
7	Time to reach steady state current	_______ms	20 ms max	300 ms max	
8	Peak Current	______Amps	10.6 Amps	5.9 Amps	
10	Rate of Change (Slope): dI/dT	_____mA/μs	677 mA/μs	250 mA/μs	

*Refer to Figure 5.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative Date Quality Control Date
(Flight Hardware Only)

TEST DATA SHEET 3
+28 MLB Operating Power (Paragraph 3.2.4.2.1.2)

Step	+28V MLB at 27 Volts	Measured	Units	Required	Pass/Fail
2	+28 V MLB voltage at 27 V (V_b) (Measured)		Volts	27.0 ± 0.1	
3	Average Current (I_V) (PLLO#1)		Amps	N/A	N/A
4	+28 V MLB operating power = I_V x V_b (PLLO#1)		Watts	82 W max	
6	Average current (I_V) (PLLO#2)		Amps	N/A	N/A
7	+28 V MLB operating power = I_V x V_b (PLLO#2)		Watts	82 W max	
	+28 V MLB at 28 Volts				
9	+28 V MLB bus voltage at 28 V (V_b) (Measured)		Volts	28.0 ± 0.1	
10	Average Current (I_V) (PLLO#1)		Amps	N/A	N/A
11	+28 V MLB operating power = I_V X V_b (PLLO#1)		Watts	82 W max	
13	Average current (I_V) (PLLO#2)		Amps	N/A	N/A
14	+28 V MLB operating power = I_V x V_b (PLLO#2)		Watts	82 W max	
	+28 V MLB at 29 Volts				
16	+28 V MLB voltage at 29 V (V_b) (Measured)		Volts	29.0 ± 0.1	
17	Average Current (I_V) (PLLO#1)		Amps	N/A	N/A
18	+28 V MLB operating power = I_V x V_b (PLLO#1)		Watts	82 W max	
20	Average current (I_V) (PLLO#2)		Amps	N/A	N/A
21	+28 V MLB operating power = I_V x V_b (PLLO#2)		Watts	82 W max	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 4 (Sheet 1 of 2)
+28 Pulse Load Bus (Paragraph 3.2.4.2.2.1-3.2.4.2.2.6)

Paragraph	Parameter	Measured or Calculated	Required	Pass/ Fail
3.2.4.2.2.1	From -0.1 to two seconds			
	Peak Current = I_p	___Amps	1.3 amps max	
3.2.4.2.2.2	From 2 to 4 seconds			
	Peak Current = I_p	___Amps	1.3 amps max	
3.2.4.2.2.3	From 4 to 6 seconds			
	Peak Current = I_p	___Amps	1.3 amps max	
3.2.4.2.2.4	From 6 to 8 seconds			
	Peak Current = I_p	___Amps	1.3 amps max	
3.2.4.2.2.5	Eight Sec. Integrated Current Measurement:			
	Current	___mA	None	
3.2.4.2.2.6	Turn-on Transient:			
	dI/dT	___mA/µs	744 mA/µs *	
	Peak Current = I_p	___Amps	11.5 Amps	

* Refer to Figure 9.

Bus current during the I/H, D period

Paragraph	Parameter	Measured or Calculated	Pass/ Fail
3.2.4.2.2.1	From -0.1 to 2 secs	mA	N/A
3.2.4.2.2.2	From 2 to 4 secs	mA	N/A
3.2.4.2.2.3	From 4 to 6 secs	mA	N/A
3.2.4.2.2.5	From 6 to 8 secs	mA	N/A

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 4 (Sheet 2 of 2)
+28 Pulse Load Bus (Paragraph 3.2.4.2.2.7)

Bus current during warm cal, cold cal, & Nadir

Paragraph	Parameter	Measured or Calculated	Pass/ Fail
3.2.4.2.2.7 (2)	Warm cal	mA	N/A
3.2.4.2.2.7 (3)	Cold cal	mA	N/A
3.2.4.2.2.7 (4)	Nadir	mA	N/A
3.2.4.2.2.7 (5)	Warm cal (motors off)	mA	N/A

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 5

+28 V Analog Telemetry Bus (Paragraph 3.2.4.2.3)

Step	Parameter	Measured/ Calculated	Required	Pass/ Fail
3	+28 V ATB Bus Voltage (V_{at}) (Measured)	____Volts	28.0 ±0.5	
4	Av. Current (I_a)	____mA	7 mA max	
5	+28 V ATB Operating Power = I_a X V_{at}	____mW	200 mW max	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 6
+10 V Interface Bus Voltage (Paragraph 3.2.4.2.4)

Step	Parameter	Measured/ Calculated	Required	Pass/ Fail
3	Av. Current (I_a)	____mA	10 mA max	
3	+10 V Interface Bus (V_{ib}) (Measured)	____Volts	9.0 ±1.0 V	
4	+10 V Interface Bus Power = I_a X V_{ib}	____mW	100 mW max	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: ________ S/N: ________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 7
Power Input Test for LPT (Paragraph 3.2.4.2.5)

Step	Parameter	Measured	Units	Required	Pass/ Fail
3	+28 V MLB Voltage (Vb) (Measured at connector J1)		Volts	28 ±0.5	
3	Current		Amps	Between 0.5 and 4.3 Amps	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 8
1.248 MHz Clock Signal Verification (Paragraph 3.2.4.3.2.1)

1.248 CLOCK SIGNAL
ATTACH PHOTOGRAPH OR PLOT HERE

Step	Parameter	Measured/ Calculated	Required	Pass/ Fail
5	Clock Frequency	____MHz	1.248 ±10%	
	Clock Amplitude	____Volts	9.0 ±1.0 V	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 9
"C1" Shift Pulse Verification (Paragraph 3.2.4.3.2.2)

"C1" SHIFT PULSE
Attach Photograph OR Plot Here

Parameter	Measured/ Calculated	Required	Pass/ Fail
Pulse Timing (A) *	____µs	48 µs ± 10%	
Pulse Timing (B) *	____µs	12 µs ± 10%	
Pulse Amplitude	____Volts	9.0 ± 1.0 V	

* Refer to Figure 19 for location of the pulse timing A and B.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 10
"A1" Select Pulse Verification (Paragraph 3.2.4.3.2.3)

"A1" SELECT PULSE
Attach Photograph or Plot Here

Parameter	Measured/ Calculated	Required	Pass/ Fail
Select Pulse Timing (F) *	____ μs	961.5 μs± 10%	
Select Pulse Amplitude	___ Volts	9.0 ±1.0 V	

* Refer to Figure 13 for location of the pulse timing F

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____________________ Test Systems Engineer Date

____________________ Customer Representative (Flight Hardware Only) Date

____________________ Quality Control Date

TEST DATA SHEET 11
"8 Seconds" Frame Sync Pulse (Paragraph 3.2.4.3.2.4)

"8 SECONDS" FRAME SYNC PULSE
Attach Photograph or Plot Here
(Record of "C" timing only is required)

Step	Parameter	Measured/ Calculated	Required	Pass/ Fail
1*	Frame Sync Pulse Timing (G)*	___ Sec	8 Sec ±10%	
	Frame Sync Pulse Timing (C)*	___ μs	240.4 μs ±10%	
	Frame Sync Pulse Amplitude	___ Volts	9.0 ±1.0 V	

* Refer to Figure 13 for location of the timing pulses for G and C.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 12 (Sheet 1 of 2)
Synchronization Signals Relationship (Paragraph 3.2.4.3.2.5)

A1 Select pulse and the 8 seconds Frame sync pulse.

ATTACH PHOTOGRAPH OR PLOT HERE

Verify that the sync pulse between H and C is as shown in Figure 19.

TIME MEASURED: __________

TIME REQUIRED: 1.2 ms ±10%

PASS/FAIL ________________________

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: _________ S/N: _________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 12 (Sheet 2 of 2)
Synchronization Signals Relationship (Paragraph 3.2.4.3.2.5)

A1 Select pulse and the C1 Shift pulse.

ATTACH PHOTOGRAPH OR PLOT HERE

Verify that the sync pulse between I and E is as shown in Figure 19.

TIME MEASURED: __________

TIME REQUIRED: 24 μs ±1 μs

PASS/FAIL ________________________

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: _________ S/N: _________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 13
Synchronization Signals Relationship (Paragraph 3.2.4.3.2.5)

A1 Select pulse and the 1.248 MHz clock.

ATTACH PHOTOGRAPH OR PLOT HERE

Verify that the sync pulse between I and J is as shown in Figure 19.

PASS/FAIL ____________________

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: ________ S/N: ________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 14

Commands and Digital-B Telemetry Verification (Paragraphs 3.2.4.3.3.1, 3.2.4.3.3.2, 3.2.4.3.3.3, and 3.2.4.3.3.4)

Test	Digital-B Commands Verification Via STE			Visual Inspection		Pass/Fail
	Command	Observed	Required	Observed	Required	
3.2.4.3.3.1 Module Totally Off	Scanner A1-1		OFF		Antenna pointing to warm load.	
	Scanner A1-2		OFF		Antenna pointing to warm load.	
	Module Power		Disconnect	N/A	N/A	
	Survival Htr. Power.		OFF		28 V supply current=0	
3.2.4.3.3.2 Survival Heater Power	Survival Heater ON		ON	N/A	N/A	
	Survival Heater OFF		OFF	N/A	N/A	
3.2.4.3.3.3 Module Power Connect	Module Power		Connect		+28 V DC current is between 0.5 and 3.2 amps.	
3.2.4.3.3.4 PLL Power	PLLO#2		PLLO#2	N/A	N/A	
	PLLO#1		PLLO#1	N/A	N/A	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 15
Scanner Commands Verification (Paragraph 3.2.4.3.3.5, Step 1)

Test	Digital "B" Verification			Pass/Fail
	Command	Observed	Required	
Full Scan	1 Module Power		CONNECT	
	2 Survival Heater		OFF	
	3 Scanner A1 Power		ON	
	4 Scanner A2 Power		ON	
	5 Antenna Warm Cal Pos.		NO	
	6 Antenna Cold Cal Pos.		NO	
	7 Antenna NADIR Position		NO	
	8 Antenna Full Scan		YES	
	9 PLL Power		PLL#1	
	10 Cold MSB		0	
	11 Cold LSB		0	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 16
Scanner Commands Verification (Paragraph 3.2.4.3.3.5, Step 2)

Test	Digital "B" Verification			Pass/Fail
	Command	Observed	Required	
Full Scan	1 Module Power		CONNECT	
	2 Survival Heater		OFF	
	3 Scanner A1 Power		OFF	
	4 Scanner A2 Power		OFF	
	5 Antenna Warm Cal Pos.		NO	
	6 Antenna Cold Cal Pos.		NO	
	7 Antenna NADIR Position		NO	
	8 Antenna Full Scan		YES	
	9 PLL Power		PLLO#1	
	10 Cold MSB		0	
	11 Cold LSB		0	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 17
Scanner Commands Verification (Paragraph 3.2.4.3.3.5, Step 3)

Test	Digital "B" Verification			Pass/Fail
	Command	Observed	Required	
Full Scan	1 Module Power		CONNECT	
	2 Survival Heater		OFF	
	3 Scanner A1 Power		ON	
	4 Scanner A2 Power		ON	
	5 Antenna Warm Cal Pos.		NO	
	6 Antenna Cold Cal Pos.		NO	
	7 Antenna NADIR Position		NO	
	8 Antenna Full Scan		YES	
	9 PLL Power		PLLO#1	
	10 Cold MSB		0	
	11 Cold LSB		0	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 18

Scanner Positions Commands (Paragraph 3.2.4.3.3.6)

Test	Digital "B" Verification				Pass/Fail
	Step/Description		Observed	Required	
Scanner Position Commands	1-Warm Cal.			YES	
	2-Cold Cal. Pos.	MSB		0	
		LSB		1	
	3-Cold Cal. Pos.	MSB		1	
		LSB		0	
	4-Cold Cal. Pos.	MSB		1	
		LSB		1	
	5-Cold Cal. Pos.	MSB		0	
		LSB		0	
	6-NADIR			YES	
	7-Warm Cal			YES	

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 19
Digital-A Data Output Full Scan Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.1)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1		255	
	0002	Sync Sequence Byte 2		255	
	0003	Sync Sequence Byte 3		255	
[II]	0004	Unit I.D. and Serial N		*	
[III]	0005	Digital-B Data Byte 1		2	
	0006	Digital-B Data Byte 2		**	
	0007	Digital-B Data Byte 3		0	
	0008	Digital-B Data Byte 4		0	

* AMSU A1 Identification Words (data entered in decimal system)

	Binary	Decimal
AMSU-A1 S/N 101	00000001	1
AMSU-A1 S/N 102	00000101	5
AMSU-A1 S/N 103	00001001	9
AMSU-A1 S/N 104	00001101	13
AMSU-A1 S/N 105	00010001	17
AMSU-A1 S/N 106	00010101	21
AMSU-A1 S/N 107	00011001	25
AMSU-A1 S/N 108	00011101	29
AMSU-A1 S/N 109	00100001	33

** Required value = 14 when PLLO #1 is active; and = 6 when PLLO #2 is active.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer ______ Date

Customer Representative (Flight Hardware Only) ______ Date

Quality Control ______ Date

TEST DATA SHEET 20

Reflector Positions Section [IV] (Paragraph 3.2.4.3.4.1)

BP	A1-1 Reflector				A1-2 Reflector			
	Element (For Ref)	Measured*	Required**	Pass/Fail	Element (For Ref)	Measured*	Required**	Pass/Fail
01	0014				0016			
02	0048				0050			
03	0082				0084			
04	0116				0118			
05	0150				0152			
06	0184				0186			
07	0218				0220			
08	0252				0254			
09	0286				0288			
10	0320				0322			
11	0354				0356			
12	0388				0390			
13	0422				0424			
14	0456				0458			
15	0490				0492			
16	0524				0526			
17	0558				0560			
18	0592				0594			
19	0626				0628			
20	0660				0662			
21	0694				0696			
22	0728				0730			
23	0762				0764			
24	0796				0798			
25	0830				0832			
26	0864				0866			
27	0890				0900			
28	0932				0934			
29	0966				0968			
30	1000				1002			
CC	1034				1036			
WC	1186				1188			

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.

** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

__________________________ Test Systems Engineer Date

__________________________ Customer Representative (Flight Hardware Only) Date

__________________________ Quality Control Date

TEST DATA SHEET 21
Digital-A Data Output Radiometer Data Section [V] (Paragraph 3.2.4.3.4.1)

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
01	0018				0030			
02	0052				0064			
03	0086				0098			
04	0120				0132			
05	0154				0166			
06	0188				0200			
07	0222				0234			
08	0256				0268			
09	0290				0302			
10	0324				0336			
11	0356				0370			
12	0392				0404			
13	0426				0438			
14	0460				0472			
15	0494				0506			
16	0528				0540			
17	0562				0574			
18	0596				0608			
19	0630				0642			
20	0664				0676			
21	0698				0710			
22	0732				0744			
23	0766				0778			
24	0800				0812			
25	0834				0846			
26	0868				0880			
27	0902				0914			
28	0936				0948			
29	0970				0982			
30	1004				1016			
CC	1038				1050			
WC	1190				1202			

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required = 16,500 ± 4000 counts.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: ________ S/N: ________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 22 (Sheet 1 of 2)
Full Scan Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.1)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1		25 ± 15	
1092	A1-1 Warm Load 2		25 ± 15	
1094	A1-1 Warm Load 3		25 ± 15	
1096	A1-1 Warm Load 4		25 ± 15	
1098	A1-1 Warm Load Center		25 ± 15	
1100	A1-2 Warm Load 1		25 ± 15	
1102	A1-2 Warm Load 2		25 ± 15	
1104	A1-2 Warm Load 3		25 ± 15	
1106	A1-2 Warm Load 4		25 ± 15	
1108	A1-2 Warm Load Center		25 ± 15	
1110	Local Oscillator Channel 7		25 ± 15	
1112	Local Oscillator Channel 8		25 ± 15	
1114	Local Oscillator Channel 15		25 ± 15	
1116	PLL LO #2 Channels 9-14		25 ± 15	
1118	PLL LO #1 Channels 9-14		25 ± 15	
1120	PLLO (Reference Oscillator)**/ Not used ***		25 ± 15	
1122	Mixer I.F. Amp. Channel 3		25 ± 15	
1124	Mixer I.F. Amp. Channel 4		25 ± 15	
1126	Mixer I.F. Amp. Channel 5		25 ± 15	
1128	Mixer I.F. Amp. Channel 6		25 ± 15	
1130	Mixer I.F. Amp. Channel 7		25 ± 15	
1132	Mixer I.F. Amp. Channel 8		25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14		25 ± 15	
1136	Mixer I.F. Amp. Channel 15		25 ± 15	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 22 (Sheet 2 of 2)
Full Scan Mode Temperature Sensors Section [VI (Paragraph 3.2.4.3.4.1)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14		25 ± 15	
1140	I.F. Amp. Channel 9		25 ± 15	
1142	I.F. Amp. Channel 10		25 ± 15	
1144	I.F. Amp. Channel 11		25 ± 15	
1146	DC/DC Converter		25 ± 15	
1148	I.F. Amp. Channel 13		25 ± 15	
1150	I.F. Amp. Channel 14		25 ± 15	
1152	I.F. Amp. Channel 12		25 ± 15	
1154	RF Shelf A1-1		25 ± 15	
1156	RF Shelf A1-2		25 ± 15	
1158	Detector Preamp Assy.		25 ± 15	
1160	Scan Motor A1-1		25 ± 15	
1162	Scan Motor A1-2		25 ± 15	
1164	Feed Horn A1-1		25 ± 15	
1166	Feed Horn A1-2		25 ± 15	
1168	R.F. Mux A1-1		25 ± 15	
1170	R.F. Mux A1-2		25 ± 15	
1172	Local Oscillator Channel 3		25 ± 15	
1174	Local Oscillator Channel 4		25 ± 15	
1176	Local Oscillator Channel 5		25 ± 15	
1178	Local Oscillator Channel 6		25 ± 15	
1180	Temp Sensor Ref Voltage Count		**	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer ____________ Date

Customer Representative (Flight Hardware Only) ____________ Date

Quality Control ____________ Date

TEST DATA SHEET 23
Digital-A Data Output Warm Cal Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.2)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1		255	
	0002	Sync Sequence Byte 2		255	
	0003	Sync Sequence Byte 3		255	
[II]	0004	Unit I.D. and Serial N		*	
[III]	0005	Digital-B Data Byte 1		4	
	0006	Digital-B Data Byte 2		14	
	0007	Digital-B Data Byte 3		0	
	0008	Digital-B Data Byte 4		0	

*	AMSU A1 Identification Words (data entered in decimal system)	Binary	Decimal
	AMSU-A1 S/N 101	00000001	1
	AMSU-A1 S/N 102	00000101	5
	AMSU-A1 S/N 103	00001001	9
	AMSU-A1 S/N 104	00001101	13
	AMSU-A1 S/N 105	00010001	17
	AMSU-A1 S/N 106	00010101	21
	AMSU-A1 S/N 107	00011001	25
	AMSU-A1 S/N 108	00011101	29
	AMSU-A1 S/N 109	00100001	33

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 24

Reflector Position Warm Cal Mode Section [IV] and Reflector Position Nadir Mode Section [IV] (Paragraphs 3.2.4.3.4.2 and 3.2.4.3.4.4)

BP	A1-1 Reflector			
	Para No.	Position*	Required**	Pass/Fail
WC	3.2.4.3.4.2			
15	3.2.4.3.4.4			

WC = Warm Cal
15 = Nadir Position

BP	A1-2 Reflector			
	Para No.	Position*	Required**	Pass/Fail
WC	3.2.4.3.4.2			
15	3.2.4.3.4.4			

WC = Warm Cal
15 = Nadir Position

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer ______________ Date

Customer Representative (Flight Hardware Only) ______________ Date

Quality Control ______________ Date

TEST DATA SHEET 25

Digital-A Data Output Warm Cal Mode Radiometer Data Section [V] (Paragraph 3.2.4.3.4.2)

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Measured*	Required**	Pass/Fail	Element (For Ref)	Measured*	Required**	Pass/Fail
01	0018				0030			
02	0052				0064			
03	0086				0098			
04	0120				0132			
05	0154				0166			
06	0188				0200			
07	0222				0234			
08	0256				0268			
09	0290				0302			
10	0324				0336			
11	0356				0370			
12	0392				0404			
13	0426				0438			
14	0460				0472			
15	0494				0506			
16	0528				0540			
17	0562				0574			
18	0596				0608			
19	0630				0642			
20	0664				0676			
21	0698				0710			
22	0732				0744			
23	0766				0778			
24	0800				0812			
25	0834				0846			
26	0868				0880			
27	0902				0914			
28	0936				0948			
29	0970				0982			
30	1004				1016			
CC	1038		0		1050		0	
WC	1190		0		1202		0	

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.

** Required = 16,500 ± 4000 counts.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

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Test Systems Engineer Date

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Customer Representative (Flight Hardware Only) Date

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Quality Control Date

TEST DATA SHEET 26 (Sheet 1 of 2)
Warm Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.2)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1		25 ± 15	
1092	A1-1 Warm Load 2		25 ± 15	
1094	A1-1 Warm Load 3		25 ± 15	
1096	A1-1 Warm Load 4		25 ± 15	
1098	A1-1 Warm Load Center		25 ± 15	
1100	A1-2 Warm Load 1		25 ± 15	
1102	A1-2 Warm Load 2		25 ± 15	
1104	A1-2 Warm Load 3		25 ± 15	
1106	A1-2 Warm Load 4		25 ± 15	
1108	A1-2 Warm Load Center		25 ± 15	
1110	Local Oscillator Channel 7		25 ± 15	
1112	Local Oscillator Channel 8		25 ± 15	
1114	Local Oscillator Channel 15		25 ± 15	
1116	PLL LO #2 Channels 9-14		25 ± 15	
1118	PLL LO #1 Channels 9-14		25 ± 15	
1120	PLLO (Reference Oscillator)**/ Not used ***			
1122	Mixer I.F. Amp. Channel 3		25 ± 15	
1124	Mixer I.F. Amp. Channel 4		25 ± 15	
1126	Mixer I.F. Amp. Channel 5		25 ± 15	
1128	Mixer I.F. Amp. Channel 6		25 ± 15	
1130	Mixer I.F. Amp. Channel 7		25 ± 15	
1132	Mixer I.F. Amp. Channel 8		25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14		25 ± 15	
1136	Mixer I.F. Amp. Channel 15		25 ± 15	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 26 (Sheet 2 of 2)
Warm Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.2)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14		25 ± 15	
1140	I.F. Amp. Channel 9		25 ± 15	
1142	I.F. Amp. Channel 10		25 ± 15	
1144	I.F. Amp. Channel 11		25 ± 15	
1146	DC/DC Converter		25 ± 15	
1148	I.F. Amp. Channel 13		25 ± 15	
1150	I.F. Amp. Channel 14		25 ± 15	
1152	I.F. Amp. Channel 12		25 ± 15	
1154	RF Shelf A1-1		25 ± 15	
1156	RF Shelf A1-2		25 ± 15	
1158	Detector Preamp Assy.		25 ± 15	
1160	Scan Motor A1-1		25 ± 15	
1162	Scan Motor A1-2		25 ± 15	
1164	Feed Horn A1-1		25 ± 15	
1166	Feed Horn A1-2		25 ± 15	
1168	R.F. Mux A1-1		25 ± 15	
1170	R.F. Mux A1-2		25 ± 15	
1172	Local Oscillator Channel 3		25 ± 15	
1174	Local Oscillator Channel 4		25 ± 15	
1176	Local Oscillator Channel 5		25 ± 15	
1178	Local Oscillator Channel 6		25 ± 15	
1180	Temp Sensor Ref Voltage Count		**	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 27
Digital-A Data Output Cold Cal Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.3)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1		255	
	0002	Sync Sequence Byte 2		255	
	0003	Sync Sequence Byte 3		255	
[II]	0004	Unit I.D. and Serial N		*	
[III]	0005	Digital-B Data Byte 1		8	
	0006	Digital-B Data Byte 2		14	
	0007	Digital-B Data Byte 3		0	
	0008	Digital-B Data Byte 4		0	

* AMSU A1 Identification Words (data entered in decimal system)	Binary	Decimal
AMSU-A1 S/N 101	00000001	1
AMSU-A1 S/N 102	00000101	5
AMSU-A1 S/N 103	00001001	9
AMSU-A1 S/N 104	00001101	13
AMSU-A1 S/N 105	00010001	17
AMSU-A1 S/N 106	00010101	21
AMSU-A1 S/N 107	00011001	25
AMSU-A1 S/N 108	00011101	29
AMSU-A1 S/N 109	00100001	33

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 28 (Sheet 1 of 2)
Reflector Position Warm Cal Mode Section [IV], Reflector Position Cold Cal Mode Section [IV], and Reflector Position Nadir Mode Section [IV] (Paragraphs 3.2.4.3.4.2, 3.2.4.3.4.3, and 3.2.4.3.4.4)

BP	A1-1 Reflector			
	Para No.	Position*	Required**	Pass/Fail
CC	3.2.4.3.4.3, Step 4			
	a.			
	b.			
	c.			
	d.			

CC = Cold Cal

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

3.2.4.3.4.3, Step 4 Substep	MSB	LSB
a.	0	0
b.	0	1
c.	1	0
d.	1	1

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 28 (Sheet 2 of 2)
Reflector Position Warm Cal Mode Section [IV], Reflector Position Cold Cal Mode Section [IV], and Reflector Position Nadir Mode Section [IV (Paragraphs 3.2.4.3.4.2, 3.2.4.3.4.3, and 3.2.4.3.4.4)

BP	A1-2 Reflector			
	Para No.	Position*	Required**	Pass/Fail
CC	3.2.4.3.4.3, Step 4			
	a.			
	b.			
	c.			
	d.			

CC = Cold Cal

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

3.2.4.3.4.3, Step 4 Substep	MSB	LSB
a.	0	0
b.	0	1
c.	1	0
d.	1	1

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: _________ S/N: _________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 29

Digital-A Data Output Cold Cal Mode Radiometer Data Section [V] (Paragraph 3.2.4.3.4.3)

Condition: Cold Cal Position MSB=0 and Cold Cal Position LSB=0

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Measured*	Required**	Pass/Fail	Element (For Ref)	Measured*	Required**	Pass/Fail
01	0018				0030			
02	0052				0064			
03	0086				0098			
04	0120				0132			
05	0154				0166			
06	0188				0200			
07	0222				0234			
08	0256				0268			
09	0290				0302			
10	0324				0336			
11	0356				0370			
12	0392				0404			
13	0426				0438			
14	0460				0472			
15	0494				0506			
16	0528				0540			
17	0562				0574			
18	0596				0608			
19	0630				0642			
20	0664				0676			
21	0698				0710			
22	0732				0744			
23	0766				0778			
24	0800				0812			
25	0834				0846			
26	0868				0880			
27	0902				0914			
28	0936				0948			
29	0970				0982			
30	1004				1016			
CC	1038		0		1050		0	
WC	1190		0		1202		0	

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.

** Required = 16,500 ± 4000 counts.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 30 (Sheet 1 of 2)
Cold Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.3)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1		25 ± 15	
1092	A1-1 Warm Load 2		25 ± 15	
1094	A1-1 Warm Load 3		25 ± 15	
1096	A1-1 Warm Load 4		25 ± 15	
1098	A1-1 Warm Load Center		25 ± 15	
1100	A1-2 Warm Load 1		25 ± 15	
1102	A1-2 Warm Load 2		25 ± 15	
1104	A1-2 Warm Load 3		25 ± 15	
1106	A1-2 Warm Load 4		25 ± 15	
1108	A1-2 Warm Load Center		25 ± 15	
1110	Local Oscillator Channel 7		25 ± 15	
1112	Local Oscillator Channel 8		25 ± 15	
1114	Local Oscillator Channel 15		25 ± 15	
1116	PLL LO #2 Channels 9-14		25 ± 15	
1118	PLL LO #1 Channels 9-14		25 ± 15	
1120	PLLO (Reference Oscillator)**/ Not used ***			
1122	Mixer I.F. Amp. Channel 3		25 ± 15	
1124	Mixer I.F. Amp. Channel 4		25 ± 15	
1126	Mixer I.F. Amp. Channel 5		25 ± 15	
1128	Mixer I.F. Amp. Channel 6		25 ± 15	
1130	Mixer I.F. Amp. Channel 7		25 ± 15	
1132	Mixer I.F. Amp. Channel 8		25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14		25 ± 15	
1136	Mixer I.F. Amp. Channel 15		25 ± 15	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 30 (Sheet 2 of 2)
Cold Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.3)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14		25 ± 15	
1140	I.F. Amp. Channel 9		25 ± 15	
1142	I.F. Amp. Channel 10		25 ± 15	
1144	I.F. Amp. Channel 11		25 ± 15	
1146	DC/DC Converter		25 ± 15	
1148	I.F. Amp. Channel 13		25 ± 15	
1150	I.F. Amp. Channel 14		25 ± 15	
1152	I.F. Amp. Channel 12		25 ± 15	
1154	RF Shelf A1-1		25 ± 15	
1156	RF Shelf A1-2		25 ± 15	
1158	Detector Preamp Assy.		25 ± 15	
1160	Scan Motor A1-1		25 ± 15	
1162	Scan Motor A1-2		25 ± 15	
1164	Feed Horn A1-1		25 ± 15	
1166	Feed Horn A1-2		25 ± 15	
1168	R.F. Mux A1-1		25 ± 15	
1170	R.F. Mux A1-2		25 ± 15	
1172	Local Oscillator Channel 3		25 ± 15	
1174	Local Oscillator Channel 4		25 ± 15	
1176	Local Oscillator Channel 5		25 ± 15	
1178	Local Oscillator Channel 6		25 ± 15	
1180	Temp Sensor Ref Voltage Count		**	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 31
Digital-A Data Output Nadir Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.4)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1		255	
	0002	Sync Sequence Byte 2		255	
	0003	Sync Sequence Byte 3		255	
[II]	0004	Unit I.D. and Serial N		*	
[III]	0005	Digital-B Data Byte 1		16	
	0006	Digital-B Data Byte 2		14	
	0007	Digital-B Data Byte 3		0	
	0008	Digital-B Data Byte 4		0	

* AMSU A1 Identification Words (data entered in decimal system)	Binary	Decimal
AMSU-A1 S/N 101	00000001	1
AMSU-A1 S/N 102	00000101	5
AMSU-A1 S/N 103	00001001	9
AMSU-A1 S/N 104	00001101	13
AMSU-A1 S/N 105	00010001	17
AMSU-A1 S/N 106	00010101	21
AMSU-A1 S/N 107	00011001	25
AMSU-A1 S/N 108	00011101	29
AMSU-A1 S/N 109	00100001	33

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer ____ Date

Customer Representative (Flight Hardware Only) ____ Date

Quality Control ____ Date

TEST DATA SHEET 32

Digital-A Data Output Nadir Mode Radiometer Data Section [V] (Paragraph 3.2.4.3.4.4)

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
01	0018				0030			
02	0052				0064			
03	0086				0098			
04	0120				0132			
05	0154				0166			
06	0188				0200			
07	0222				0234			
08	0256				0268			
09	0290				0302			
10	0324				0336			
11	0356				0370			
12	0392				0404			
13	0426				0438			
14	0460				0472			
15	0494				0506			
16	0528				0540			
17	0562				0574			
18	0596				0608			
19	0630				0642			
20	0664				0676			
21	0698				0710			
22	0732				0744			
23	0766				0778			
24	0800				0812			
25	0834				0846			
26	0868				0880			
27	0902				0914			
28	0936				0948			
29	0970				0982			
30	1004				1016			
CC	1038		0		1050		0	
WC	1190		0		1202		0	

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.

** Required = 16,500 ± 4000 counts (Unless otherwise indicated).

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

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Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 33 (Sheet 1 of 2)
Nadir Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.4)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1		25 ± 15	
1092	A1-1 Warm Load 2		25 ± 15	
1094	A1-1 Warm Load 3		25 ± 15	
1096	A1-1 Warm Load 4		25 ± 15	
1098	A1-1 Warm Load Center		25 ± 15	
1100	A1-2 Warm Load 1		25 ± 15	
1102	A1-2 Warm Load 2		25 ± 15	
1104	A1-2 Warm Load 3		25 ± 15	
1106	A1-2 Warm Load 4		25 ± 15	
1108	A1-2 Warm Load Center		25 ± 15	
1110	Local Oscillator Channel 7		25 ± 15	
1112	Local Oscillator Channel 8		25 ± 15	
1114	Local Oscillator Channel 15		25 ± 15	
1116	PLL LO #2 Channels 9-14		25 ± 15	
1118	PLL LO #1 Channels 9-14		25 ± 15	
1120	PLLO (Reference Oscillator)**/ Not used ***		25 ± 15	
1122	Mixer I.F. Amp. Channel 3		25 ± 15	
1124	Mixer I.F. Amp. Channel 4		25 ± 15	
1126	Mixer I.F. Amp. Channel 5		25 ± 15	
1128	Mixer I.F. Amp. Channel 6		25 ± 15	
1130	Mixer I.F. Amp. Channel 7		25 ± 15	
1132	Mixer I.F. Amp. Channel 8		25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14		25 ± 15	
1136	Mixer I.F. Amp. Channel 15		25 ± 15	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 33 (Sheet 2 of 2)
Nadir Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.4)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14		25 ± 15	
1140	I.F. Amp. Channel 9		25 ± 15	
1142	I.F. Amp. Channel 10		25 ± 15	
1144	I.F. Amp. Channel 11		25 ± 15	
1146	DC/DC Converter		25 ± 15	
1148	I.F. Amp. Channel 13		25 ± 15	
1150	I.F. Amp. Channel 14		25 ± 15	
1152	I.F. Amp. Channel 12		25 ± 15	
1154	RF Shelf A1-1		25 ± 15	
1156	RF Shelf A1-2		25 ± 15	
1158	Detector Preamp Assy.		25 ± 15	
1160	Scan Motor A1-1		25 ± 15	
1162	Scan Motor A1-2		25 ± 15	
1164	Feed Horn A1-1		25 ± 15	
1166	Feed Horn A1-2		25 ± 15	
1168	R.F. Mux A1-1		25 ± 15	
1170	R.F. Mux A1-2		25 ± 15	
1172	Local Oscillator Channel 3		25 ± 15	
1174	Local Oscillator Channel 4		25 ± 15	
1176	Local Oscillator Channel 5		25 ± 15	
1178	Local Oscillator Channel 6		25 ± 15	
1180	Temp Sensor Ref Voltage Count		**	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 34
Analog Telemetry Verification by Way of Connector J6 (Paragraph 3.2.4.3.5.1)

	From	Description	To	Measured (volts)	Required (volts)	Pass/Fail
03	J6-02	RF Shelf A1-1 Temp.	J1-10	______	3.5 ± 2 V	______
01	J6-03	A1-1 Scan Motor Temp.	J1-10	______	3.5 ± 2 V	______
05	J6-04	Warm Load A1-1 Temp.	J1-10	______	3.5 ± 2 V	______
04	J6-21	RF Shelf A1-2 Temp.	J1-10	______	3.5 ± 2 V	______
02	J6-22	A1-2 Scan Motor Temp.	J1-10	______	3.5 ± 2 V	______
06	J6-23	Warm Load A1-2 Temp.	J1-10	______	3.5 ± 2 V	______
25	J6-06	PLLO No. 2 Lock detect	J2-03	______	***	______
07	J6-08	A1-1 Drive Motor Curr.	J2-03	______	3.5 ± 2 V	______
10	J6-09	+15 V Antenna Drive	J2-03	______	3.5 ± 2 V	______
15	J6-10	+5 V Antenna Drive	J2-03	______	3.5 ± 2 V	______
09	J6-11	+15 V Signal Processing	J2-03	______	3.5 ± 2 V	______
14	J6-12	+5 V Signal Processing	J2-03	______	3.5 ± 2 V	______
22	J6-13	L.O. Voltage Channel 3	J2-03	______	3.5 ± 2 V	______
24	J6-14	L.O. Voltage Channel 5	J2-03	______	3.5 ± 2 V	______
20	J6-15	L.O. Voltage Channel 7	J2-03	______	3.5 ± 2 V	______
16	J6-16	+15 V PLL LO Ch 9-14	J2-03	______	3.5 ± 2 V	______
17	J6-17	*	J2-03	______	3.5 ± 2 V	______
27	J6-18	L.O. Voltage Channel 15	J2-03	______	3.5 ± 2 V	______
26	J6-25	PLLO No. 1 Lock detect	J2-03	______	***	______
08	J6-27	A1-2 Drive Motor Curr.	J2-03	______	3.5 ± 2 V	______
12	J6-28	-15 V Antenna Drive	J2-03	______	3.5 ± 2 V	______
11	J6-29	-15 V Signal Processing	J2-03	______	3.5 ± 2 V	______
23	J6-30	L.O. Voltage Channel 4	J2-03	______	3.5 ± 2 V	______
21	J6-31	L.O. Voltage Channel 6	J2-03	______	3.5 ± 2 V	______
19	J6-32	L.O. Voltage Channel 8	J2-03	______	3.5 ± 2 V	______
18	J6-33	-15 V PLL LO Ch 9-14	J2-03	______	3.5 ± 2 V	______
13	J6-34	**	J2-03	______	3.5 ± 2 V	______

* +8.5 V PLL LO Ch 9-14 for S/N 101-104, +10V Mixer Amp for S/N 105 and above.
** +8 V Receiver for S/N 101-104, +8 V IF Amp for S/N 105 and above.
*** 4.5 ±0.5 when locked, 0.5 ±0.5 when unlocked or OFF. One must be locked.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 35 (Sheet 1 of 2)
Analog Telemetry Signals by Way of the STE (Paragraph 3.2.4.3.5.2)

	Description	(*)	Measured (Deg. C)	Required (Deg. C)	Pass/Fail
01	A1-1 Scanner Motor	Temp	______	25 ± 15	______
02	A1-2 Scanner Motor	Temp	______	25 ± 15	______
03	A1-1 RF Shelf	Temp	______	25 ± 15	______
04	A1-2 RF Shelf	Temp	______	25 ± 15	______
05	A1-1 Warm Load	Temp	______	25 ± 15	______
06	A1-2 Warm Load	Temp	______	25 ± 15	______
			(mAmps)	(mAmps)	
07	Ant A1-1 Drv Motor Current		______	125 mA (Max)	______
08	Ant A1-2 Drv Motor Current		______	125 mA (Max)	______

(*) Data from the printout sheet. Rewriting data on this space is optional.

(Continued on sheet 2)

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative Date
(Flight Hardware Only)

Quality Control Date

TEST DATA SHEET 35 (Sheet 2 of 2)
Analog Telemetry Signals by Way of the STE (Paragraph 3.2.4.3.5.2)

	Description	(*)	Measured (volts)	Required (volts)	Pass/ Fail
09	Signal Processing	+15 V	_______	15.0 ± 0.5 V	_______
10	Antenna Drive	+15 V	_______	15.0 ± 0.5 V	_______
11	Signal Processing	-15 V	_______	-15.0 ± 0.5 V	_______
12	Antenna Drive	-15 V	_______	-15.0 ± 0.5 V	_______
13	Receiver	+8 V	_______	8.0 ± 0.5 V	_______
14	Sig Processing	+5 V	_______	5.0 ± 0.5 V	_______
15	Antenna Drive	+5 V	_______	5.0 ± 0.5 V	_______
16	Phase Lock Loop Ch 9-14 (a)/	+8.5 V	_______	8.5 ± 0.5 V	_______
	Receiver/Mixer IF (b)	+10 V	_______	10.0 ±0.5 V	_______
17	Phase Lock Loop Ch 9-14	+15 V	_______	15.0 ± 0.5 V	_______
18	Phase Lock Loop Ch 9-14	-15 V	_______	-15.0 ± 0.5 V	_______
19	L.O. #8	Ch-8	_______	(**)__ ± 0.5 V	_______
20	L.O. #7	Ch-7	_______	(**)__ ± 0.5 V	_______
21	L.O. #6	Ch-6	_______	(**)__ ± 0.5 V	_______
22	L.O. #3	Ch-3	_______	(**)__ ± 0.5 V	_______
23	L.O. #4	Ch-4	_______	(**)__ ± 0.5 V	_______
24	L.O. #5	Ch-5	_______	(**)__ ± 0.5 V	_______
25	PLLO No. 2 Lock Detect		_______	(***)	_______
26	PLLO No. 1 Lock Detect		_______	(***)	_______
27	L.O. #15	Ch-15	_______	(**)__ ± 0.5 V	_______

(*) Data from the printout sheet. Rewriting data on this space is optional.
(**) GDO voltages from the manufacturer data sheet for S/N 101-104; DRO CH3-8 10V, GDO CH15 15V for S/N 105 and above.
(***) Locked PLO voltage 0 to +15 V, other PLO voltage ±15.0 V; one must be locked for S/N 101-104. Locked PLO voltage 4.0 ±1.0 V, other PLO voltage 0.0 ±0.2 V, one must be locked for S/N 105 and above.
(a) For S/N 101 through 104. (b) For S/N 105 and up.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 36

Integrate/Hold and Dump Signal Verification (Paragraph 3.2.4.3.6.1)

ATTACH PHOTOGRAPH OR PLOT HERE

Parameter	Measured	Required	Pass/ Fail
Scope Channel-1: Integration/Hold			
Time Measured (A)*	ms	165 ms ± 10%	
Time Measured (B)*	ms	35 ms ± 10%	
Amplitude Measured	V	5.0 ± 0.2 V	
Scope Channel-2: Dump Signal			
Time Measured (D)*	ms	9 ms to 15 ms	
Amplitude Measured	V	5.0 ± 0.2 V	

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 37
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

ATTACH PHOTOGRAPH OR PLOT HERE

Channel ________03
Frequency: ______________50.3 GHz

INTEGRATION (X) *
Measured ______________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ______________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ______________ms
Required 9 ms to 15 ms
Pass/Fail ___________

ATTACH PHOTOGRAPH OR PLOT HERE

Channel ________04
Frequency: ______________52.8 GHz

INTEGRATION (X) *
Measured ______________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ______________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ______________ms
Required 9 ms to 15 ms
Pass/Fail ___________

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 38

Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______05
Frequency: ____________53.596 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______06
Frequency: ____________54.4 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative Date Quality Control Date
(Flight Hardware Only)

TEST DATA SHEET 39

Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______07
Frequency: ____________54.94 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______08
Frequency: ____________55.5 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 40

Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______09
Frequency: ____________57.2903 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______10
Frequency: ____________57.2903 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 41
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

ATTACH PHOTOGRAPH OR PLOT HERE

Channel ________11
Frequency: ____________57.3903 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

ATTACH PHOTOGRAPH OR PLOT HERE

Channel ________12
Frequency: ____________57.3903 GHz

INTEGRATION (X) *
Measured ____________ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ms
Required 9 ms to 15 ms
Pass/Fail ___________

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 42
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______ 13
Frequency: ____________ 57.3903 GHz

INTEGRATION (X) *
Measured ____________ ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ ms
Required 9 ms to 15 ms
Pass/Fail ___________

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______ 14
Frequency: ____________ 57.3903 GHz

INTEGRATION (X) *
Measured ____________ ms
Required 165 ms ± 10%
Pass/Fail ___________

HOLD (B-D) *
Measured ____________ ms
Required 25 ms ± 10%
Pass/Fail ___________

DUMP (D) *
Measured ____________ ms
Required 9 ms to 15 ms
Pass/Fail ___________

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

____
Customer Representative (Flight Hardware Only) Date

____
Quality Control Date

TEST DATA SHEET 43
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

ATTACH PHOTOGRAPH OR PLOT HERE

Channel _______15
Frequency: ___________89 GHz

INTEGRATION (X) *
Measured ___________ms
Required 165 ms ± 10%
Pass/Fail __________

HOLD (B-D) *
Measured ___________ms
Required 25 ms ± 10%
Pass/Fail __________

DUMP (D) *
Measured ___________ms
Required 9 ms to 15 ms
Pass/Fail __________

* Refer to Figure 2 for waveform configuration.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: _________ S/N: _________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 44
PLLO No. 1 Verification (Paragraph 3.2.4.3.6.3)
PLLO No. 2 Verification (Paragraph 3.2.4.3.6.4)

PLLO NO. 1

PLLO No. 1 dc Level ______________ Required: * Pass/Fail ______

PLLO NO. 2

PLLO No. 2 dc Level ______________ Required: * Pass/Fail ______

* -15 to +15 V dc level for S/N 101 - S/N 104, 4.0 ±1.0 V for S/N 105 and above.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: _________ S/N: _________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative Date Quality Control Date
(Flight Hardware Only)

TEST DATA SHEET 45
Digital-A/GSE Mode-1 Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.7.2)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1		255	
	0002	Sync Sequence Byte 2		255	
	0003	Sync Sequence Byte 3		255	
[II]	0004	Unit I.D. and Serial N		*	
[III]	0005	Digital-B Data Byte 1		0	
	0006	Digital-B Data Byte 2		14	
	0007	Digital-B Data Byte 3		0	
	0008	Digital-B Data Byte 4		0	

* AMSU A1 Identification Words (data entered in decimal system)	Binary	Decimal
AMSU-A1 S/N 101	00000001	1
AMSU-A1 S/N 102	00000101	5
AMSU-A1 S/N 103	00001001	9
AMSU-A1 S/N 104	00001101	13
AMSU-A1 S/N 105	00010001	17
AMSU-A1 S/N 106	00010101	21
AMSU-A1 S/N 107	00011001	25
AMSU-A1 S/N 108	00011101	29
AMSU-A1 S/N 109	00100001	33

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 46 (Sheet 1 of 2)
Reflector Position (Paragraphs 3.2.4.3.7.2 - 3.2.4.3.7.7)

3.2.4.3.7.2 Digital-A/GSE Mode-1 Reflector Position Section [IV] ***

BP	A1-1 Reflector				A1-2 Reflector			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
06	0184				0186			
CC	354				356			
WC	694				696			

3.2.4.3.7.3 Digital-A/GSE Mode-2 Reflector Position Section [IV] ***

BP	A1-1 Reflector				A1-2 Reflector			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
01	0014				0016			

3.2.4.3.7.4 Digital-A/GSE Mode-3 Reflector Position Section [IV] ***

A1-1 Reflector			A1-2 Reflector		
Observed	Required**	Pass/Fail	Observed	Required**	Pass/Fail
	****			****	

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.
*** GSE Modes do not require verification or testing for PFM & FM modules
**** Observe that both A1-1 and A1-2 reflectors increment one step every 8 seconds.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 46 (Sheet 2 of 2)
Reflector Position (Paragraphs 3.2.4.3.7.2 - 3.2.4.3.7.7)

3.2.4.3.7.5 Digital-A/GSE Mode-4 Reflector Position Section [IV] ***

BP	A1-1 Reflector				A1-2 Reflector			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
30	1000				1002			

3.2.4.3.7.6 Digital-A/GSE Mode-5 Reflector Position Section [IV] ***

BP	A1-1 Reflector				A1-2 Reflector			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
06	0184				0186			

3.2.4.3.7.7 Digital-A/GSE Mode-7 Reflector Position Section [IV] ***

BP	A1-1 Reflector				A1-2 Reflector			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
06	0184				0186			

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.
*** GSE Modes do not require verification or testing for PFM & FM modules

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer ____________ Date

Customer Representative (Flight Hardware Only) ____________ Date

Quality Control ____________ Date

TEST DATA SHEET 47
Digital-A/GSE Mode-1 Radiometer Data Section [V] (Paragraph 3.2.4.3.7.2)

BP	A1-1 Reflector			A1-2 Reflector		
	Channel-3*	Required**	Pass/Fail	Channel-9*	Required**	Pass/Fail
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required = 16,500 ± 4000 counts.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 48 (Sheet 1 of 2)
Digital-A/GSE Mode-1 Temperature Sensors Section [VI] (Paragraph 3.2.4.3.7.2)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1		25 ± 15	
1092	A1-1 Warm Load 2		25 ± 15	
1094	A1-1 Warm Load 3		25 ± 15	
1096	A1-1 Warm Load 4		25 ± 15	
1098	A1-1 Warm Load Center		25 ± 15	
1100	A1-2 Warm Load 1		25 ± 15	
1102	A1-2 Warm Load 2		25 ± 15	
1104	A1-2 Warm Load 3		25 ± 15	
1106	A1-2 Warm Load 4		25 ± 15	
1108	A1-2 Warm Load Center		25 ± 15	
1110	Local Oscillator Channel 7		25 ± 15	
1112	Local Oscillator Channel 8		25 ± 15	
1114	Local Oscillator Channel 15		25 ± 15	
1116	PLL LO #2 Channels 9-14		25 ± 15	
1118	PLL LO #1 Channels 9-14		25 ± 15	
1120	PLLO (Reference Oscillator)**/ Not used ***			
1122	Mixer I.F. Amp. Channel 3		25 ± 15	
1124	Mixer I.F. Amp. Channel 4		25 ± 15	
1126	Mixer I.F. Amp. Channel 5		25 ± 15	
1128	Mixer I.F. Amp. Channel 6		25 ± 15	
1130	Mixer I.F. Amp. Channel 7		25 ± 15	
1132	Mixer I.F. Amp. Channel 8		25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14		25 ± 15	
1136	Mixer I.F. Amp. Channel 15		25 ± 15	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 48 (Sheet 2 of 2)
Digital-A/GSE Mode-1 Temperature Sensors Section [VI] (Paragraph 3.2.4.3.7.2)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14		25 ± 15	
1140	I.F. Amp. Channel 9		25 ± 15	
1142	I.F. Amp. Channel 10		25 ± 15	
1144	I.F. Amp. Channel 11		25 ± 15	
1146	DC/DC Converter		25 ± 15	
1148	I.F. Amp. Channel 13		25 ± 15	
1150	I.F. Amp. Channel 14		25 ± 15	
1152	I.F. Amp. Channel 12		25 ± 15	
1154	RF Shelf A1-1		25 ± 15	
1156	RF Shelf A1-2		25 ± 15	
1158	Detector Preamp Assy.		25 ± 15	
1160	Scan Motor A1-1		25 ± 15	
1162	Scan Motor A1-2		25 ± 15	
1164	Feed Horn A1-1		25 ± 15	
1166	Feed Horn A1-2		25 ± 15	
1168	R.F. Mux A1-1		25 ± 15	
1170	R.F. Mux A1-2		25 ± 15	
1172	Local Oscillator Channel 3		25 ± 15	
1174	Local Oscillator Channel 4		25 ± 15	
1176	Local Oscillator Channel 5		25 ± 15	
1178	Local Oscillator Channel 6		25 ± 15	
1180	Temp Sensor Ref Voltage Count		**	

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 49
Receiver Input Signals (Paragraph 3.2.4.4.1)

CH 9 through 14 PLLO	PRT Temp (°C)		Measured * Frequency	Requirements **	Pass/ Fail
PLLO No. 1	PLO No. 1	Xtal *** Osc.		57290.334 MHz ± 50 kHz	
PLLO No. 2	PLO No. 2	Xtal *** Osc.		57290.334 MHz ± 50 kHz	

* Attach spectrum analyzer plots.
** = At 18°C
*** PRT not connected on S/N 105 and above.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 50 (Sheet 1 of 2)
Radiometer "Relative" NEΔT Verification* (Paragraph 3.2.4.4.2.2)

Channels 3, 4, 5, 6, 7, 8, and 15. PLLO No. 1 (Channels 9 through 14)

Channel Number>	3	4	5	6
NEΔT (Average of 5 data)	______	______	______	______
Pass/Fail	______	______	______	______
NEΔT (Specified) K **	0.40	0.25	0.25	0.25
Channel Number>	7	8	9	10
NEΔT (Average of 5 data)	______	______	______	______
Pass/Fail	______	______	______	______
NEΔT (Specified) K **	0.25	0.25	0.25	0.40
Channel Number>	11	12	13	14
NEΔT (Average of 5 data)	______	______	______	______
Pass/Fail	______	______	______	______
NEΔT (Specified) K **	0.40	0.60	0.80	1.20
Channel Number>	15			
NEΔT (Average of 5 data)	______			
Pass/Fail	______			
NEΔT (Specified) K **	0.50			

* Baseline data for acceptance tests. Use first CPT or first LPT data along with specification value for pass/fail criteria

** For reference only

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative Date Quality Control Date
(Flight Hardware Only)

TEST DATA SHEET 50 (Sheet 2 of 2)
Radiometer "Relative" NEΔT Verification* (Paragraph 3.2.4.4.2.2)

PLLO No. 2 (Channels 9 through 14)

Channel Number>	9	10	11	12
NEΔT (Average of 5 data)	_______	_______	_______	_______
Pass/Fail	_______	_______	_______	_______
NEΔT (Specified) K **	0.25	0.40	0.40	0.60
Channel Number>	13	14		
NEΔT (Average of 5 data)	_______	_______		
Pass/Fail	_______	_______		
NEΔT (Specified) K **	0.80	1.20		

* Baseline data for acceptance tests. Use first CPT or first LPT data along with specification value for pass/fail criteria
** For reference only

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

______________________________ Date
Test Systems Engineer

______________________________ Date
Customer Representative
(Flight Hardware Only)

______________________________ Date
Quality Control

TEST DATA SHEET 51 (Sheet 1 of 2)
Transient Susceptibility Test (Paragraph 3.2.4.2.1.4, 3.2.4.2.2.9, 3.2.4.2.3.3)

Test Setup Verified: ____________
Signature

3.2.4.2.1.4: +28V Main Bus Load-Induced Transient Test

Subpara	Step	Load Induced Transient	Functional Performance Results/Deviations	Comments/ Observations
3.2.4.2.1.4.2	8	Low frequency in accordance with Figure 8		
3.2.4.2.1.4.3	10	High frequency 1.43 Hz 200 mV p-p		
3.2.4.2.1.4.3	10	High frequency 2.86 Hz 1.00 V p-p		
3.2.4.2.1.4.3	10	High frequency 6.67 Hz 1.50 V p-p		

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: ________ S/N: ________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 51 (Sheet 2 of 2)
Transient Susceptibility Test (Paragraph 3.2.4.2.1.4, 3.2.4.2.2.9, 3.2.4.2.3.3)

Test Setup Verified: ______________
Signature

3.2.4.2.2.9: +28V Pulse Load Bus Load-Induced Transient Test

Subpara	Step	Load Induced Transient	Functional Performance Results/Deviations	Comments/ Observations
3.2.4.2.2.9.2	8	Low frequency in accordance with Figure 13		
3.2.4.2.2.9.3	10	High frequency 1.43 Hz 200 mV p-p		
3.2.4.2.2.9.3	10	High frequency 2.86 Hz 1.00 V p-p		
3.2.4.2.2.9.3	10	High frequency 6.67 Hz 1.50 V p-p		

3.2.4.2.3.3: +28V Analog Telemetry Bus Load-Induced Transient Test

Subpara	Step	Load Induced Transient	Functional Performance Results/Deviations	Comments/ Observations
3.2.4.2.3.3.2	8	Low frequency in accordance with Figure 16		
3.2.4.2.3.3.3	10	High frequency 1.43 Hz 200 mV p-p		
3.2.4.2.3.3.3	10	High frequency 2.86 Hz 1.00 V p-p		
3.2.4.2.3.3.3	10	High frequency 6.67 Hz 1.50 V p-p		

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

Test Systems Engineer Date

Customer Representative (Flight Hardware Only) Date

Quality Control Date

TEST DATA SHEET 52
Channel Identification Test (Paragraph 3.2.4.5)

Channel Number	Antenna Location	Sweeper Freq. Setting (GHz)	Polarization (H/V)	Radiometric Data Counts Δ Counts	Channel Verified (Yes/No)
3	A1-2	50.35	V		
4	A1-2	52.85	V		
5	A1-2	53.70	H		
6	A1-1	54.45	H		
7	A1-1	54.99	V		
8	A1-2	55.55	H		
9	A1-1	57.34	H		
10	A1-1	57.50	H		
11	A1-1	57.564	H		
12	A1-1	57.59	H		
13	A1-1	57.602	H		
14	A1-1	57.608	H		
15	A1-1	89.55	V		

Circle Test: CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: __________ S/N: __________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative (Flight Hardware Only) Date Quality Control Date

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GenCorp Aerojet

DOCUMENT APPROVAL SHEET

TITLE	DOCUMENT NO.
Process Specification METSAT/KLM/AMSU-A1, System Comprehensive and Limited Performance Tests Test Procedure	AE-26156/3C 6 April 1999

INPUT FROM:	DATE	CDRL:	SPECIFICATION ENGINEER:	DATE
			James A. Gomez	4-5-99

CHECKED BY:	DATE	JOB NUMBER:	DATE
E M Wch	99-04-06	N/A	

APPROVED SIGNATURES	DEPT. NO.	DATE
System Safety (W. Neighbors) W. A. Neighbors	8331	4/7/99
Product Team Leader (A. Nieto) A Nieto	8341	4/7/99
Systems Engineer (R. Platt) P. R. Patel	8341	4/7/99
Design Assurance (E. Lorenz) D Woon (for E. Lorenz)	8331	4/8/99
Quality Assurance (R. Taylor) [illegible] (for R. Taylor)	7831	4/8/99
Technical Director/PMO (P. Patel) P. R. Patel	8341	4/7/99
Released: Configuration Management (J. Cavanaugh) J. Cavanaugh	8361	4/12/99

Approved as Final per customer's letter dated 12 April 1999 (ECN CAMSU-2091, CAMSU-2101 and CAMSU-2104)

By my signature, I certify the above document has been reviewed by me and concurs with the technical requirements related to my area of responsibility.

(Data Center) FINAL

Laura Cornejo 4-13-99

TEST DATA SHEET 1 (Sheet 1 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J1 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	+28 V MLB	> 100k	OL	Pass
J1-2	+28 V MLB	> 100k	OL	Pass
J1-3	+28 V MLB RTN	> 100k	OL	Pass
J1-4	+28 V MLB RTN	> 100k	OL	Pass
J1-5	+28 V PLB	> 100k	OL	Pass
J1-6	+28 V PLB	> 100k	OL	Pass
J1-7	+28 V PLB RTN	> 100k	OL	Pass
J1-8	+28 V PLB RTN	> 100k	OL	Pass
J1-9	+28 V TMB	> 100k	OL	Pass
J1-10	28 V TMB RTN	> 100k	OL	Pass
J1-11	NO CONNECTION	> 100k	OL	Pass
J1-12	NO CONNECTION	> 100k	OL	Pass
J1-13	CHASSIS GROUND (E1)	< 1	.21 Ω	Pass
J1-14	+28 V MLB	> 100k	OL	Pass
J1-15	+28 V MLB	> 100k	OL	Pass
J1-16	+28 V MLB RTN	> 100k	OL	Pass
J1-17	+28 V MLB RTN	> 100k	OL	Pass
J1-18	+28 V PLB	> 100k	OL	Pass
J1-19	+28 V PLB	> 100k	OL	Pass
J1-20	+28 V PLB RTN	> 100k	OL	Pass
J1-21	+28 V PLB RTN	> 100k	OL	Pass
J1-22	+28 V TMB	> 100k	OL	Pass
J1-23	28 V TMB RTN	> 100k	OL	Pass
J1-24	SAFETY HTR PWR	> 100k	OL	Pass
J1-25	SAFETY HTR RTN	> 100k	OL	Pass

OL = ≥ 40 Meg Ω

TEST DATA SHEET 1 (Sheet 2 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

J2 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J2-1	Chassis Ground (E2)	< 1	.18 Ω	P
J2-2	DATA CLOCK (C1)	> 100k	OL	P
J2-3	Signal Return	> 100k	OL	P
J2-4	No Connection	> 100k	OL	P
J2-5	DIGITAL-A DATA OUT	> 100k	OL	P
J2-6	DATA ENABLE (A1)	> 100k	OL	P
J2-7	8 SEC SYNC PULSE	> 100k	OL	P
J2-8	No Connection	> 100k	OL	P
J2-9	No Connection	> 100k	OL	P

J3 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J3-1	1.248 MHz CLK	> 100k	OL	P
J3-2	1.248 MHz CLK RTN	> 100k	OL	P
J3-3	Chassis GND (E3)	< 1	.18 Ω	P

J5 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J5-1	Chassis Ground (E5)	< 1	.15 Ω	P
J5-2	MODULE PWR IND	> 100k	OL	P
J5-3	COLD CAL POS MSB (OUT)	> 100k	OL	P
J5-4	No Connection	> 100k	OL	P
J5-5	SCANNER A1-2 ON/OFF	> 100k	OL	P
J5-6	ANT IN COLD CAL POS	> 100k	OL	P
J5-7	PLL PRI/RED	> 100k	OL	P
J5-8	No Connection	> 100k	OL	P
J5-9	SURV HTR ON/OFF	> 100k	OL	P
J5-10	No Connection	> 100k	OL	P
J5-11	COLD CAL POS LSB (OUT)	> 100k	OL	P
J5-12	SCANNER A1-1 ON/OFF	> 100k	OL	P
J5-13	ANT IN WARM CAL POS	> 100k	OL	P
J5-14	ANT IN NADIR POS	> 100k	OL	P
J5-15	FULL SCAN MODE	> 100k	OL	P

OL = ≥ 40 Meg Ω

TEST DATA SHEET 1 (Sheet 3 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J4 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J4-1	Chassis Ground (E4)	< 1	.15 Ω	P
J4-2	MODULE PWR DISCONN	> 100k	OL	P
J4-3	SURVIVAL HTR ON	> 100k	OL	P
J4-4	MODULE TOTALLY OFF	> 100k	OL	P
J4-5	SCANNER A1-2 ON/OFF	> 100k	OL	P
J4-6	ANT AT COLD CAL POS	> 100k	OL	P
J4-7	PLL SELECT	> 100k	OL	P
J4-8	ANT AT NADIR POS	> 100k	OL	P
J4-9	COLD CAL POS MSB (IN)	> 100k	OL	P
J4-10	No Connection	> 100k	OL	P
J4-11	No Connection	> 100k	OL	P
J4-12	+10 V INTERFACE BUS	> 100k	OL	P
J4-13	10 V INTERFACE BUS RTN	> 100k	14.3 M	P
J4-14	MODULE PWR CONN	> 100k	OL	P
J4-15	SURVIVAL HTR OFF	> 100k	OL	P
J4-16	SCANNER A1-1 ON/OFF	> 100k	OL	P
J4-17	ANT AT WARM CAL POS	> 100k	OL	P
J4-18	FULL SCAN	> 100k	OL	P
J4-19	COLD CAL POS LSB (IN)	> 100k	OL	P
J4-20	No Connection	> 100k	OL	P
J4-21	No Connection	> 100k	OL	P
J4-22	No Connection	> 100k	OL	P
J4-23	No Connection	> 100k	OL	P
J4-24	+10 V INTERFACE BUS	> 100k	OL	P
J4-25	10 V INTERFACE BUS RTN	> 100k	OL	P

OL = ≥ 40 MEG Ω

TEST DATA SHEET 1 (Sheet 4 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J6 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J6-1	Chassis GND (E6)	< 1	.15 Ω	P
J6-2	RF SHELF A1-1 TEMP	> 100k	OL	P
J6-3	A1-1 SCAN. MTR. TEMP	> 100k	OL	P
J6-4	WARM LOAD A1-1 TEMP	> 100k	OL	P
J6-5	No Connection	> 100k	OL	P
J6-6	PLLO RED LOCK DETECT	> 100k	OL	P
J6-7	No Connection	> 100k	OL	P
J6-8	A1-1 DRIVE MTR CURR	> 100k	OL	P
J6-9	+15 V ANT DR MON	> 100k	OL	P
J6-10	+5 V ANT DR MON	> 100k	OL	P
J6-11	+15 V SIG PROC MON	> 100k	OL	P
J6-12	+5 V SIG PROC MON	> 100k	OL	P
J6-13	L.O. VOLTAGE CH 3 MON	> 100k	OL	P
J6-14	L.O. VOLTAGE CH 5 MON	> 100k	OL	P
J6-15	L.O. VOLTAGE CH 7 MON	> 100k	OL	P
J6-16	+15 VDC PLL LO MON	> 100k	OL	P
J6-17	+10 V MIXER/AMP MON	> 100k	OL	P
J6-18	L.O. VOLTAGE CH 15 MON	> 100k	OL	P
J6-19	No Connection	> 100k	OL	P
J6-20	28 V TMB RTN	> 100k	OL	P
J6-21	RF SHELF A1-2 TEMP	> 100k	OL	P
J6-22	A1-2 SCAN MTR TEMP	> 100k	OL	P
J6-23	WARM LOAD A1-2 TEMP	> 100k	OL	P
J6-24	No Connection	> 100k	OL	P
J6-25	PLLO PRI LOCK DETECT	> 100k	OL	P
J6-26	No Connection	> 100k	OL	P
J6-27	A1-2 DRIVE MTR CURR	> 100k	OL	P
J6-28	-15 V ANT DR MON	> 100k	OL	P
J6-29	-15 V SIG PROC MON	> 100k	OL	P
J6-30	L.O. VOLTAGE CH 4 MON	> 100k	OL	P
J6-31	L.O. VOLTAGE CH 6 MON	> 100k	OL	P
J6-32	L.O. VOLTAGE CH 8 MON	> 100k	OL	P
J6-33	-15 VDC PLL LO MON	> 100k	OL	P
J6-34	+8 V IF AMP MON	> 100k	OL	P
J6-35	No Connection	> 100k	OL	P
J6-36	No Connection	> 100k	OL	P
J6-37	No Connection	> 100k	OL	P

OL = ≥ 40 MEG Ω

TEST DATA SHEET 1 (Sheet 5 of 9)
Grounding System Test (Paragraph 3.2.4.1)

J7 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J7-1	Chassis GND (E7)	< 1	.17 Ω	P
J7-2	No Connection	> 100k	OL	P
J7-3	REDUN PLO LOCK DET	> 100k	OL	P
J7-4	15 V RTN (2/3)	> 100k	OL	P
J7-5	15 V RTN (2/3)	> 100k	OL	P
J7-6	DUMP TEST POINT	> 100k	OL	P
J7-7	No Connection	> 100k	OL	P
J7-8	CH3 OUT TEST POINT	> 100k	OL	P
J7-9	CH4 OUT TEST POINT	> 100k	OL	P
J7-10	CH5 OUT TEST POINT	> 100k	OL	P
J7-11	CH6 OUT TEST POINT	> 100k	OL	P
J7-12	CH7 OUT TEST POINT	> 100k	OL	P
J7-13	CH8 OUT TEST POINT	> 100k	OL	P
J7-14	CH9 OUT TEST POINT	> 100k	OL	P
J7-15	No Connection	> 100k	OL	P
J7-16	No Connection	> 100k	OL	P
J7-17	GSE CMD LSB	> 100k	OL	P
J7-18	GSE CMD MSB-1	> 100k	OL	P
J7-19	+5 V GSE INTERLOCK A	> 100k	OL	P
J7-20	No Connection	> 100k	OL	P
J7-21	No Connection	> 100k	OL	P
J7-22	PRI PLO LOCK DET	> 100k	OL	P
J7-23	No Connection	> 100k	OL	P
J7-24	I/H TEST POINT	> 100k	OL	P
J7-25	No Connection	> 100k	OL	P
J7-26	15 V RTN (2/3)	> 100k	OL	P
J7-27	CH10 OUT TEST POINT	> 100k	OL	P
J7-28	CH11 OUT TEST POINT	> 100k	OL	P
J7-29	CH12 OUT TEST POINT	> 100k	OL	P
J7-30	CH13 OUT TEST POINT	> 100k	OL	P
J7-31	CH14 OUT TEST POINT	> 100k	OL	P
J7-32	CH15 OUT TEST POINT	> 100k	OL	P
J7-33	No Connection	> 100k	OL	P
J7-34	No Connection	> 100k	OL	P
J7-35	GSE CMD MSB	> 100k	OL	P
J7-36	5 V RTN (1)	> 100k	OL	P
J7-37	+5 V GSE INTERLOCK B	> 100k	OL	P

TEST DATA SHEET 1 (Sheet 6 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	J1-2	+28 V MLB	< 1	.25 Ω	P
J1-1	J1-14	+28 V MLB	< 1	.37 Ω	P
J1-1	J1-15	+28 V MLB	< 1	.35 Ω	P
J1-3	J1-4	28 V MLB RTN	< 1	.23 Ω	P
J1-3	J1-16	28 V MLB RTN	< 1	.29 Ω	P
J1-3	J1-17	28 V MLB RTN	< 1	.25 Ω	P
J1-5	J1-6	+28 V PLB	< 1	.26 Ω	P
J1-5	J1-18	+28 V PLB	< 1	.35 Ω	P
J1-5	J1-19	+28 V PLB	< 1	.29 Ω	P
J1-7	J1-8	28 V PLB RTN	< 1	.21 Ω	P
J1-7	J1-20	28 V PLB RTN	< 1	.27 Ω	P
J1-7	J1-21	28 V PLB RTN	< 1	.32 Ω	P
J1-9	J1-22	+28 V TMB	< 1	.17 Ω	P
J1-10	J1-23	28 V TMB RTN	< 1	.25 Ω	P
J1-10	J6-20	28 V TMB RTN	< 1	.43 Ω	P
J4-12	J4-24	+10 V INTERFACE BUS	< 1	.31 Ω	P
J4-13	J4-25	10 V INTERFACE BUS RTN	< 1	.37 Ω	P
J1-1	J1-3	+28 V MLB	> 100k	8.6 MΩ	P
J1-1	J1-5	+28 V MLB	> 100k	16.2 MΩ	P
J1-1	J1-7	+28 V MLB	> 100k	17.2 MΩ	P
J1-1	J1-9	+28 V MLB	> 100k	OL	P
J1-1	J1-10	+28 V MLB	> 100k	OL	P
J1-1	J1-24	+28 V MLB	> 100k	OL	P
J1-1	J1-25	+28 V MLB	> 100k	OL	P
J1-1	J2-3	+28 V MLB	> 100k	15.6 MΩ	P
J1-1	J4-12	+28 V MLB	> 100k	OL	P
J1-1	J4-13	+28 V MLB	> 100k	OL	P
J1-3	J1-5	28 V MLB RTN	> 100k	1.3 MΩ	P
J1-3	J1-7	28 V MLB RTN	> 100k	393 KΩ	P
J1-3	J1-9	28 V MLB RTN	> 100k	OL	P
J1-3	J1-10	28 V MLB RTN	> 100k	OL	P
J1-3	J1-24	28 V MLB RTN	> 100k	OL	P
J1-3	J1-25	28 V MLB RTN	> 100k	OL	P
J1-3	J2-3	28 V MLB RTN	> 100k	192 KΩ	P
J1-3	J4-12	28 V MLB RTN	> 100k	2.6 MΩ	P
J1-3	J4-13	28 V MLB RTN	> 100k	2.5 MΩ	P

OL = ≥ 40 MEG Ω

TEST DATA SHEET 1 (Sheet 7 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-5	J1-7	+28 V PLB	> 100k	5.4 MΩ	P
J1-5	J1-9	+28 V PLB	> 100k	OL	P
J1-5	J1-10	+28 V PLB	> 100k	OL	P
J1-5	J1-24	+28 V PLB	> 100k	OL	P
J1-5	J1-25	+28 V PLB	> 100k	OL	P
J1-5	J2-3	+28 V PLB	> 100k	7.6M Ω	P
J1-5	J4-12	+28 V PLB	> 100k	20.7 MΩ	P
J1-5	J4-13	+28 V PLB	> 100k	22.3 MΩ	P
J1-7	J1-9	28 V PLB RTN	> 100k	OL	P
J1-7	J1-10	28 V PLB RTN	> 100k	OL	P
J1-7	J1-24	28 V PLB RTN	> 100k	OL	P
J1-7	J1-25	28 V PLB RTN	> 100k	OL	P
J1-7	J2-3	28 V PLB RTN	> 100k	192 KΩ ~~2.6 MΩ~~	P 7-14-00 AMSU 8 SEIT
J1-7	J4-12	28 V PLB RTN	> 100k	2.6 MΩ	P
J1-7	J4-13	28 V PLB RTN	> 100k	2.5 MΩ	P
J1-9	J1-10	+28 V TMB	> 100k	7.7 MΩ	P
J1-9	J1-24	+28 V TMB	> 100k	OL	P
J1-9	J1-25	+28 V TMB	> 100k	OL	P
J1-9	J2-3	+28 V TMB	> 100k	OL	P
J1-9	J4-12	+28 V TMB	> 100k	OL	P
J1-9	J4-13	+28 V TMB	> 100k	OL	P
J1-10	J1-24	28 V TMB RTN	> 100k	OL	P
J1-10	J1-25	28 V TMB RTN	> 100k	OL	P
J1-10	J2-3	28 V TMB RTN	> 100k	OL	P
J1-10	J4-12	28 V TMB RTN	> 100k	OL	P
J1-10	J4-13	28 V TMB RTN	> 100k	OL	P
J1-24	J1-25	SAFETY HTR PWR	> 100k	OL	P
J1-24	J2-3	SAFETY HTR PWR	> 100k	OL	P
J1-24	J4-12	SAFETY HTR PWR	> 100k	OL	P
J1-24	J4-13	SAFETY HTR PWR	> 100k	OL	P
J1-25	J2-3	SAFETY HTR PWR RTN	> 100k	OL	P
J1-25	J4-12	SAFETY HTR PWR RTN	> 100k	OL	P
J1-25	J4-13	SAFETY HTR PWR RTN	> 100k	OL	P
J2-3	J4-12	SIGNAL RTN	> 100k	2.4 MΩ	P
J2-3	J4-13	SIGNAL RTN	> 100k	2.3 MΩ	P
J4-12	J4-13	+10 V INTERFACE BUS	> 100k	4.7 MΩ	P

OL = ≥ 40MEG Ω

TEST DATA SHEET 1 (Sheet 8 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J2-2	J4-13	DATA CLOCK (C1)	> 2k	10.9 MΩ	P
J2-5	J4-13	DIGITAL-A DATA OUT	> 2k	35.5 MΩ	P
J2-6	J4-13	DATA ENABLE (A1)	> 2k	12.8 MΩ	P
J2-7	J4-13	8 SEC SYNC PULSE	> 2k	14.3 MΩ	P
J3-1	J4-13	1.248 MHZ CLK	> 2k	13.2 MΩ	P
J3-2	J4-13	1.248 MHZ CLK RTN	> 2k	OL	P
J4-2	J4-13	MODULE PWR DISCONN	> 2k	13.1 MΩ	P
J4-3	J4-13	SURVIVAL HTR ON	> 2k	14.7 MΩ	P
J4-4	J4-13	MODULE TOTALLY OFF	> 2k	14.7 MΩ	P
J4-5	J4-13	SCANNER A1-2 ON/OFF	> 2k	17.7 MΩ	P
J4-6	J4-13	ANT AT COLD CAL POS	> 2k	19.1 MΩ	P
J4-7	J4-13	PLL SELECT	> 2k	19.8 MΩ	P
J4-8	J4-13	ANT AT NADIR POS	> 2k	21.1 MΩ	P
J4-9	J4-13	COLD CAL POS MSB (IN)	> 2k	22.2 MΩ	P
J4-14	J4-13	MODULE PWR CONN	> 2k	21.4 MΩ	P
J4-15	J4-13	SURVIVAL HTR OFF	> 2k	22.2 MΩ	P
J4-16	J4-13	SCANNER A1-1 ON/OFF	> 2k	21.7 MΩ	P
J4-17	J4-13	ANT AT WARM CAL POS	> 2k	22.8 MΩ	P
J4-18	J4-13	FULL SCAN	> 2k	23.7 MΩ	P
J4-19	J4-13	COLD CAL POS LSB (IN)	> 2k	24.5 MΩ	P
J5-2	J4-13	MODULE PWR IND	> 2k	37.3 MΩ	P
J5-3	J4-13	COLD CAL POS MSB (OUT)	> 2k	38.0 MΩ	P
J5-5	J4-13	SCANNER A1-2 ON/OFF	> 2k	37.7 MΩ	P
J5-6	J4-13	ANT IN COLD CAL POS	> 2k	37.5 MΩ	P
J5-7	J4-13	PLL PRI/RED	> 2k	38.0 MΩ	P
J5-9	J4-13	SURV HTR ON/OFF	> 2k	37.5 MΩ	P
J5-11	J4-13	COLD CAL POS LSB (OUT)	> 2k	37.1 MΩ	P
J5-12	J4-13	SCANNER A1-1 ON/OFF	> 2k	37.6 MΩ	P
J5-13	J4-13	ANT IN WARM CAL POS	> 2k	37.1 MΩ	P
J5-14	J4-13	ANT IN NADIR POS	> 2k	36.8 MΩ	P
J5-15	J4-13	FULL SCAN MODE	> 2k	37.4 MΩ	P

OL = ≥ 40 MEG Ω

TEST DATA SHEET 1 (Sheet 9 of 9)
Grounding Interface Test (Paragraph 3.2.4.1)

Source Pin	Destination Pin	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J6-2	J1-10	RF SHELF A1-1 TEMP	> 2k	14.7 KΩ	P
J6-3	J1-10	A1-1 SCAN MTR.TEMP	> 2k	14.7 KΩ	P
J6-4	J1-10	WARM LOAD A1-1 TEMP	> 2k	14.6 KΩ	P
J6-6	J4-13	PLLO RED LOCK DETECT	> 2k	2.5 MΩ	P
J6-8	J4-13	A1-1 DRIVE MTR CVR	> 2k	3.5 MΩ	P
J6-9	J4-13	+15 VDC ANT DRIVE MON	> 2k	2.9 MΩ	P
J6-10	J4-13	+5 VDC ANT DRIVE MON	> 2k	2.8 MΩ	P
J6-11	J4-13	+15 VDC SIG PROC MON	> 2k	2.5 MΩ	P
J6-12	J4-13	+5VDC SIG PROC MON	> 2k	2.5 MΩ	P
J6-13	J4-13	L.O. VOLTAGE CH3 MON	> 2k	2.5 MΩ	P
J6-14	J4-13	L.O. VOLTAGE CH5 MON	> 2k	2.5 MΩ	P
J6-15	J4-13	L.O. VOLTAGE CH7 MON	> 2k	2.5 MΩ	P
J6-16	J4-13	+15 VDC PLL LO MON	> 2k	2.5 MΩ	P
J6-17	J4-13	+10 V MIXER/AMP MON	> 2k	2.5 MΩ	P
J6-18	J4-13	L.O. VOLTAGE CH15 MON	> 2k	2.5 MΩ	P
J6-21	J4-10	RF SHELF A1-2 TEMP	> 2k	OL	P
J6-22	J4-10	A1-2 SCAN MTR.TEMP	> 2k	OL	P
J6-23	J4-10	WARM LOAD A1-2 TEMP	> 2k	OL	P
J6-25	J4-13	PLLO PRI LOCK DETECT	> 2k	2.5 MΩ	P
J6-27	J4-13	A1-2 DRIVE MTR CURR	> 2k	3.5 MΩ	P
J6-28	J4-13	-15 VDC ANT DRIVE MON	> 2k	2.8 MΩ	P
J6-29	J4-13	-15 VDC SIG PROC MON	> 2k	2.5 MΩ	P
J6-30	J4-13	L.O. VOLTAGE CH4 MON	> 2k	2.5 MΩ	P
J6-31	J4-13	L.O. VOLTAGE CH6 MON	> 2k	2.5 MΩ	P
J6-32	J4-13	L.O. VOLTAGE CH8 MON	> 2k	2.5 MΩ	P
J6-33	J4-13	-15 VDC PLL LO MON	> 2k	2.5 MΩ	P
J6-34	J4-13	IF AMP MON	> 2k	2.5 MΩ	P

OL = ≥ 40 MEG Ω

Circle Test: FINAL CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer — Date: 7-14-00

Customer Representative (Flight Hardware Only) — Date: 7-18-00

Quality Control — QA 194 — Date: 7-14-00

TEST DATA SHEET 2
+28 MLB During Turn-on Transient (Paragraph 3.2.4.2.1.1)

At 28.56 Vdc:

Step	Parameter	Measured/ Calculated	Required* S/N 101-104	Required* S/N 105 & up	Pass/ Fail
7	Time to reach steady state current	230.5 ms	20 ms max	300 ms max	P
8	Peak Current	4.75 Amps	10.6 Amps	5.9 Amps	P
10	Rate of Change (Slope): dI/dT	81.4 mA/µs	677 mA/µs	250 mA/µs	P

At 27.44 Vdc:

Step	Parameter	Measured/ Calculated	Required* S/N 101-104	Required* S/N 105 & up	Pass/ Fail
7	Time to reach steady state current	245.4 ms	20 ms max	300 ms max	P
8	Peak Current	4.65 Amps	10.6 Amps	5.9 Amps	P
10	Rate of Change (Slope): dI/dT	116.2 mA/µs	677 mA/µs	250 mA/µs	P

At 28.00 Vdc:

Step	Parameter	Measured/ Calculated	Required* S/N 101-104	Required* S/N 105 & up	Pass/ Fail
7	Time to reach steady state current	229.1 ms	20 ms max	300 ms max	P
8	Peak Current	4.69 Amps	10.6 Amps	5.9 Amps	P
10	Rate of Change (Slope): dI/dT	136.6 mA/µs	677 mA/µs	250 mA/µs	P

* Refer to Figure 5.

Circle Test: FINAL CPT LPT

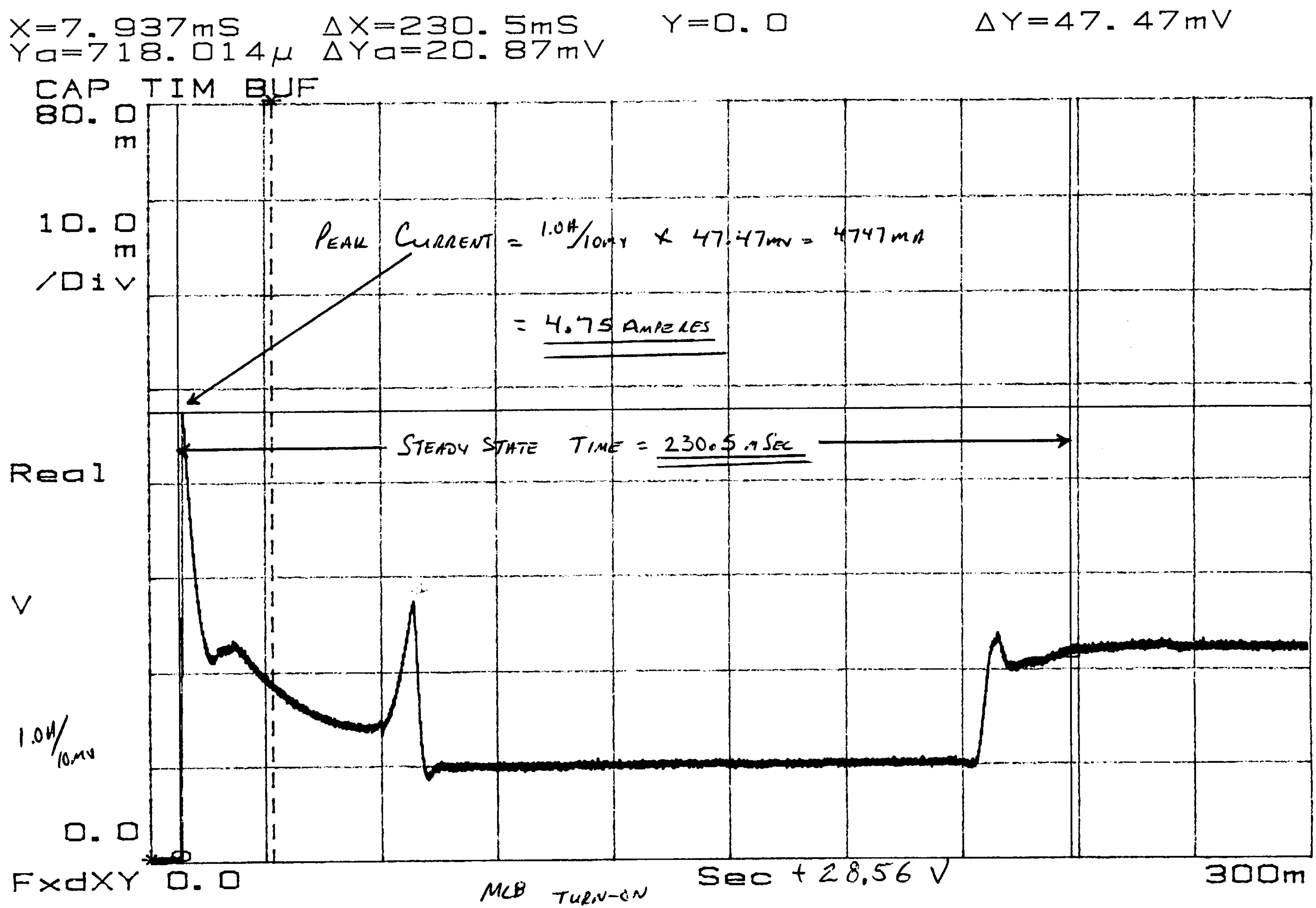
OP # 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N 109

Customer Representative (Flight Hardware Only) [signature] Date 7-15-00

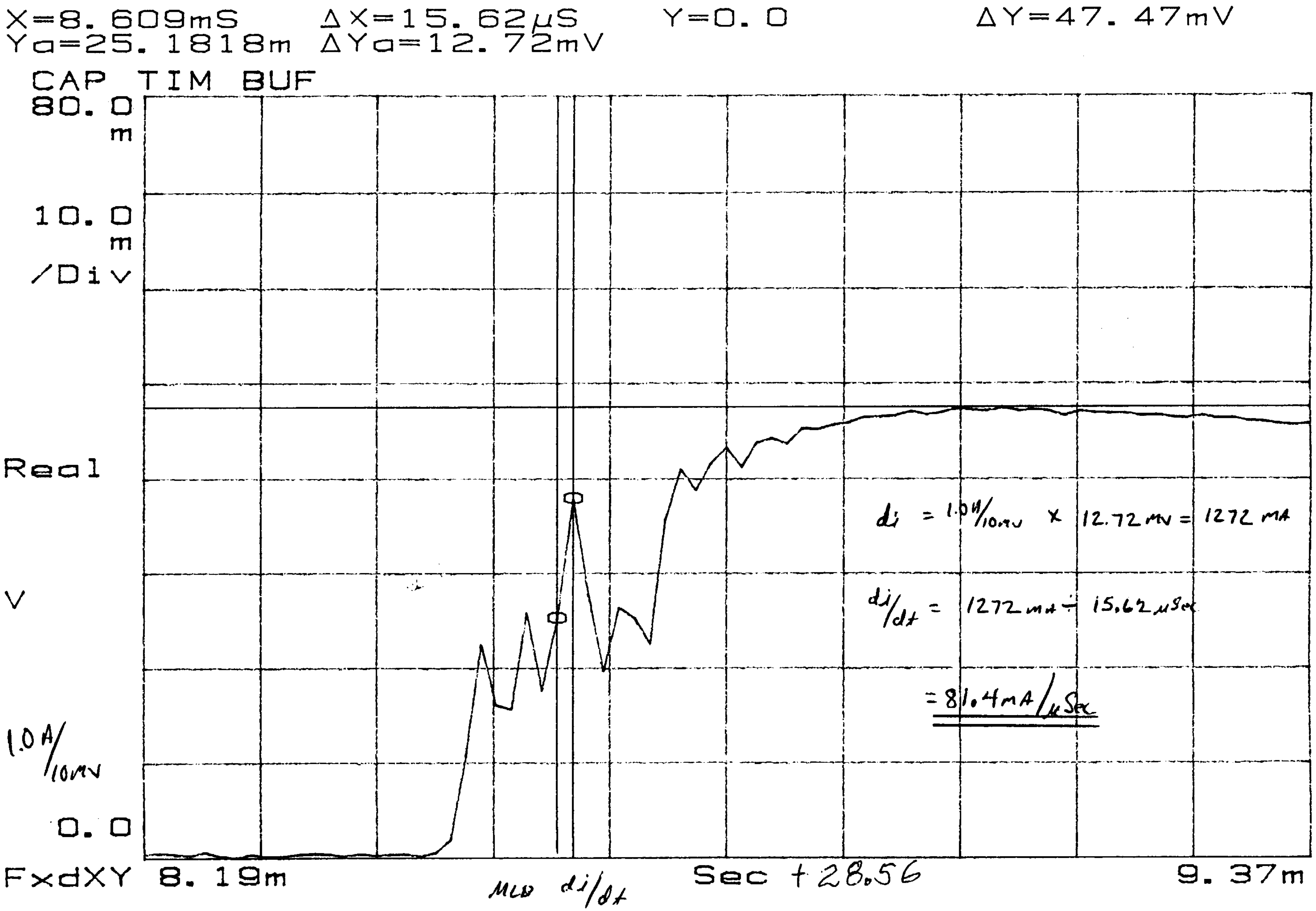
Test Systems Engineer [signature] Date 7-14-00

Quality Control [signature] 7A 194 Date 7/14/00



S/O: 787920 OP: 0830 3.2.4.2.1.1 TEST ENG: (139 T) DATE: 7-14-00

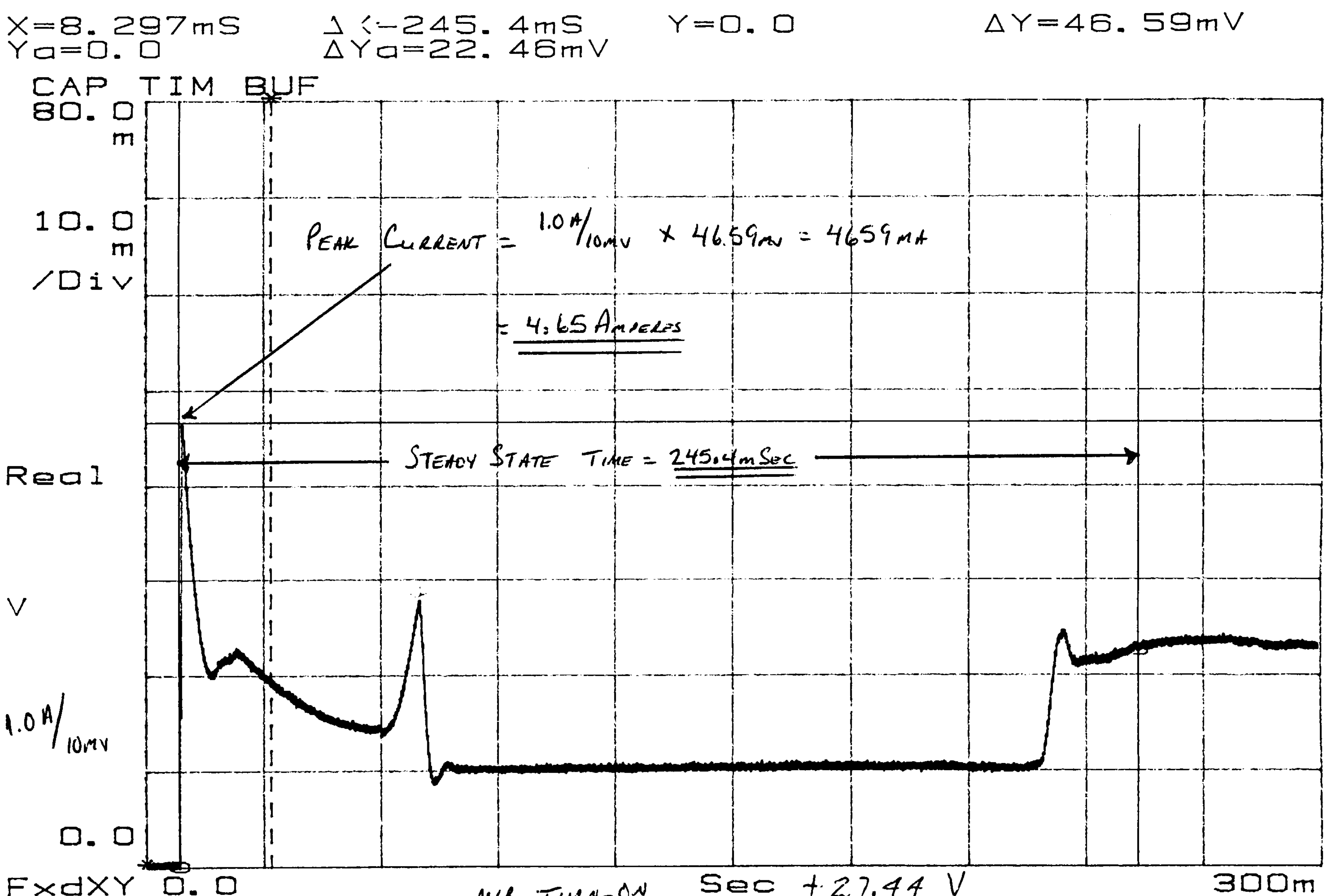
P/N: 133720-3-TST SN: 109 FINAL CPT QUALITY: (7A 194) 7/14/00



TDS-2

S/O: 787920 OP: 0830 3.2.4.2.1.1 TEST ENG: DATE: 7-14-00

P/N: 133/720-3-TST SN: 109 FINAL CPT QUALITY: 7A 194 7/14/00



MLB TURN-ON

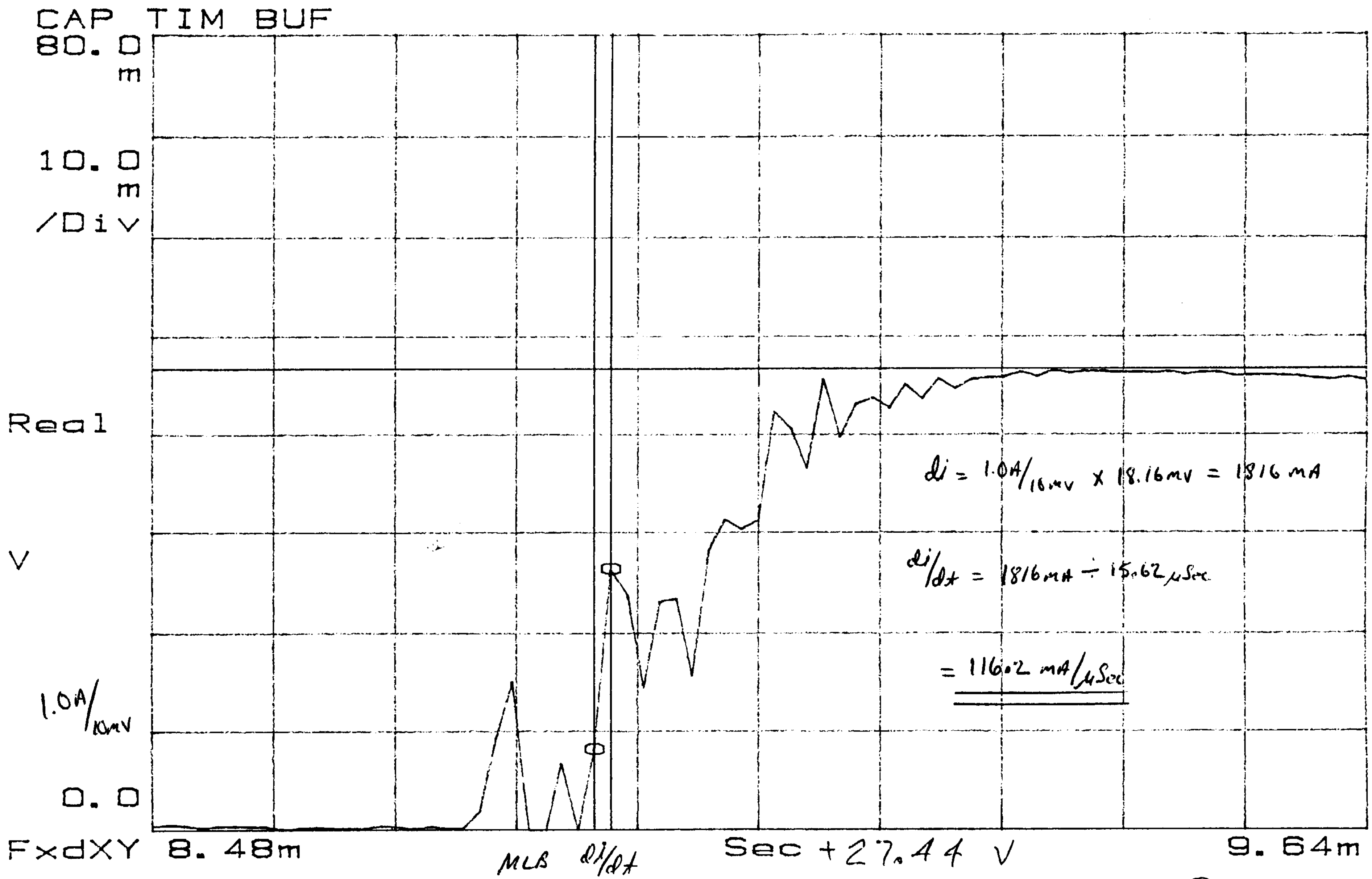
TDS-2

S/O: 787920 OP: 0830 3242.1.1. TEST ENG: 139 T DATE: 7-14-00

P/N: 131720-3-TST SN: 109 FINAL CPT QUALITY: 7A 194 7-14-00

X=8.906mS ΔX=15.62µS Y=0.0 ΔY=46.59mV

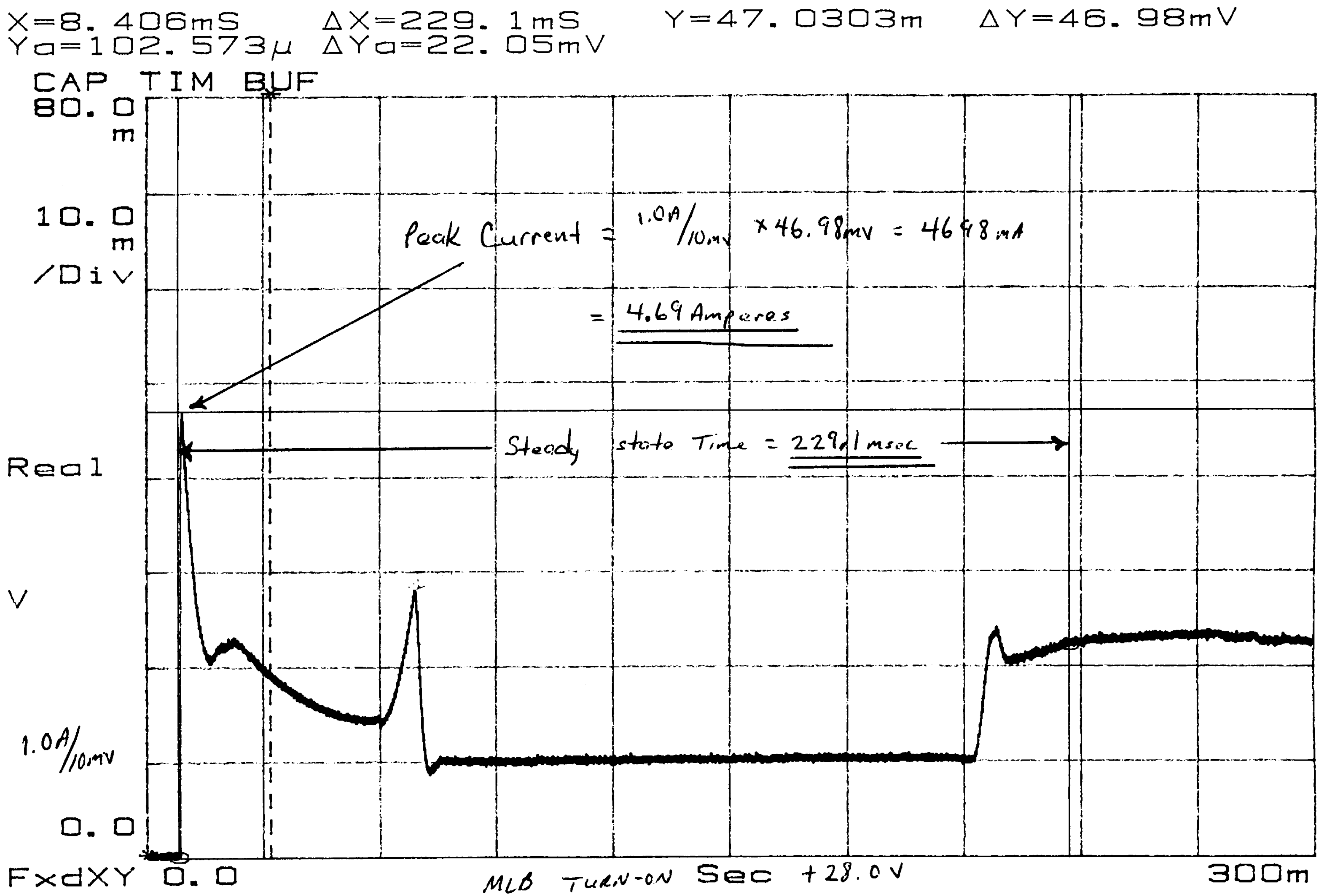
Ya=8.1033m ΔYa=18.16mV



TDS-2

S/O: 787920 OP: 0830 3242.1.1 TEST ENG: 139 T DATE: 7-14-00

P/N: 131720-3-TST SN: 109 FINAL CPT QUALITY: 7A 194 7-14-00



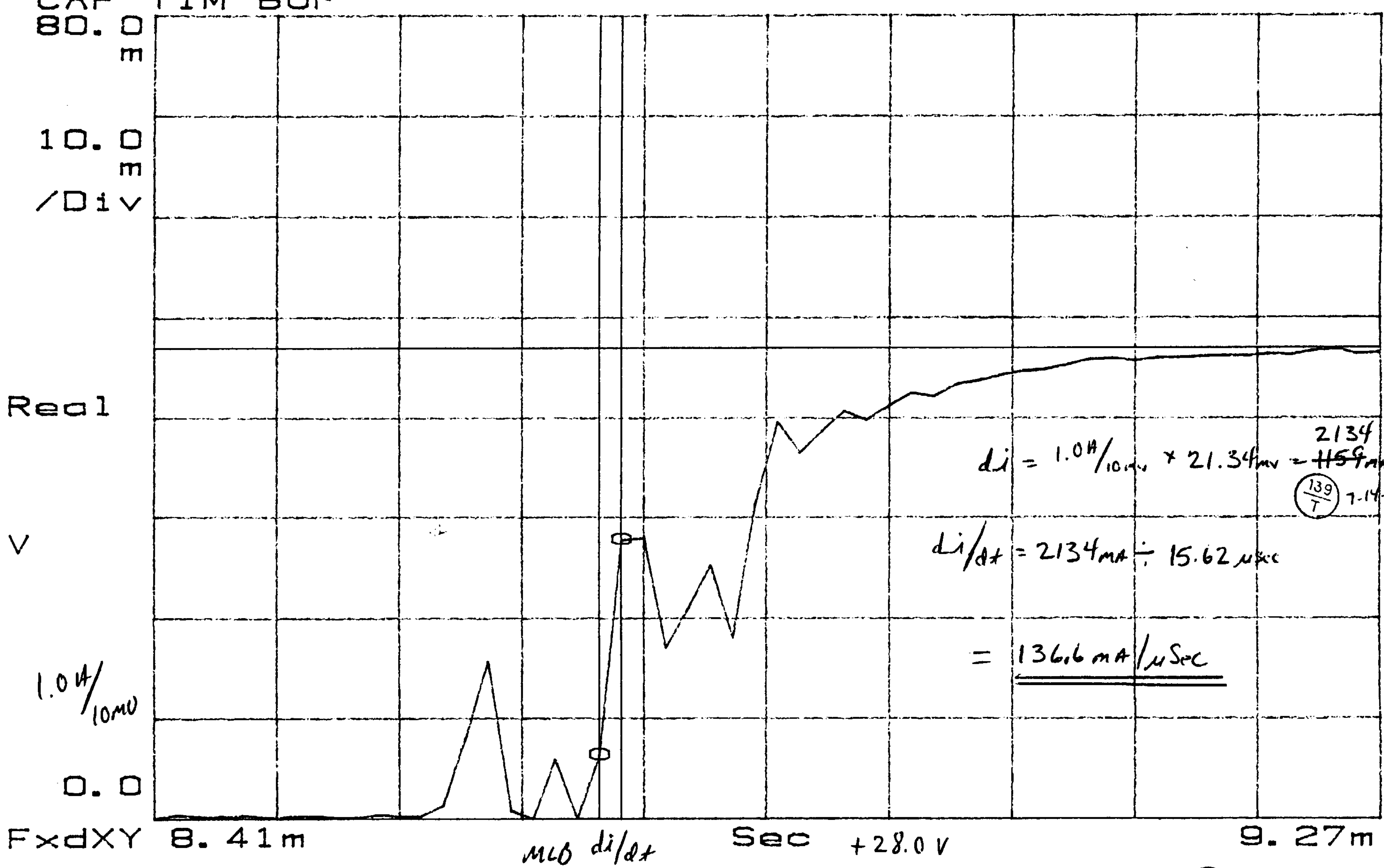
TDS . 2

S/O: 787920 OP: 0830 3.2.4.2.1.1 TEST ENG: (139 T) DATE: 7-14-00

P/N: 131720-3-TST SN: 109 FINAL CPT QUALITY: (7A 194) 7-14-00

X=8.734mS ΔX=15.62μS Y=47.0303m ΔY=46.98mV
Ya=27.7461m ΔYa=21.34mV

CAP TIM BUF



TDS-2

S/O: 787920 OP: 0830 3.2.4.2.1.1 TEST ENG: 139 T DATE: 7-14-00

P/N: 133/720-3-TST SN: 109 FINAL CPT QUALITY: 7A 194 7-14-00

TEST DATA SHEET 3
+28 MLB Operating Power (Paragraph 3.2.4.2.1.2)

Step	+28V MLB at 27 Volts	Measured	Units	Required	Pass/Fail
2	+28 V MLB voltage at 27 V (V_b) (Measured)	27.03 V	Volts	27.0 ± 0.1	P
3	Average Current (I_V) (PLLO#1)	2.34 A	Amps	N/A	N/A
4	+28 V MLB operating power = I_V x V_b (PLLO#1)	63.2 W	Watts	82 W max	P
6	Average current (I_V) (PLLO#2)	2.48 A	Amps	N/A	N/A
7	+28 V MLB operating power = I_V x V_b (PLLO#2)	67.03 W	Watts	82 W max	P
	+28 V MLB at 28 Volts				
9	+28 V MLB bus voltage at 28 V (V_b) (Measured)	28.00V	Volts	28.0 ± 0.1	P
10	Average Current (I_V) (PLLO#1)	2.26 A	Amps	N/A	N/A
11	+28 V MLB operating power = I_V X V_b (PLLO#1)	63.3 W	Watts	82 W max	P
13	Average current (I_V) (PLLO#2)	2.37 A	Amps	N/A	N/A
14	+28 V MLB operating power = I_V x V_b (PLLO#2)	66.36W	Watts	82 W max	P
	+28 V MLB at 29 Volts				
16	+28 V MLB voltage at 29 V (V_b) (Measured)	29.00 V	Volts	29.0 ± 0.1	P
17	Average Current (I_V) (PLLO#1)	2.20 A	Amps	N/A	N/A
18	+28 V MLB operating power = I_V x V_b (PLLO#1)	63.8 W	Watts	82 W max	P
20	Average current (I_V) (PLLO#2)	2.30 A	Amps	N/A	N/A
21	+28 V MLB operating power = I_V x V_b (PLLO#2)	66.7 W	Watts	82 W max	P

Circle Test: FINAL CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-14-00 Date

Customer Representative (Flight Hardware Only) 7-18-00 Date

Quality Control 7A 194 7-14-00 Date

TEST DATA SHEET 4 (Sheet 1 of 2)
+28 Pulse Load Bus (Paragraph 3.2.4.2.2.1-3.2.4.2.2.6)

Paragraph	Parameter	Measured or Calculated	Required	Pass/ Fail
3.2.4.2.2.1	From -0.1 to two seconds			
	Peak Current = I_p	1.05 Amps	1.3 amps max	P
3.2.4.2.2.2	From 2 to 4 seconds			
	Peak Current = I_p	1.05 Amps	1.3 amps max	P
3.2.4.2.2.3	From 4 to 6 seconds			
	Peak Current = I_p	1.02 Amps	1.3 amps max	P
3.2.4.2.2.4	From 6 to 8 seconds			
	Peak Current = I_p	1.04 Amps	1.3 amps max	P
3.2.4.2.2.5	Eight Sec. Integrated Current Measurement:			
	Current	111.4 mA	None	N/A
3.2.4.2.2.6	Turn-on Transient:			
	dI/dT Peak Current = I_p	285 mA/μs 6.75 Amps	744 mA/μs * 11.5 Amps	P

* Refer to Figure 9.

Bus current during the I/H, D period

Paragraph	Parameter	Measured or Calculated	Pass/ Fail
3.2.4.2.2.1	From -0.1 to 2 secs	25.2 mA	N/A
3.2.4.2.2.2	From 2 to 4 secs	19.4 mA	N/A
3.2.4.2.2.3	From 4 to 6 secs	21.34 mA	N/A
3.2.4.2.2.5	From 6 to 8 secs	16.48 mA	N/A

Circle Test: CPT FINAL LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ray Kirkburg 7-14-00
Test Systems Engineer Date

7-15-00
Customer Representative Date
(Flight Hardware Only)

269 7-15-00
Quality Control Date

TEST DATA SHEET 4 (Sheet 2 of 2)
+28 Pulse Load Bus (Paragraph 3.2.4.2.2.7)

Bus current during warm cal, cold cal, & Nadir

Paragraph	Parameter	Measured or Calculated	Pass/ Fail
3.2.4.2.2.7 (2)	Warm cal	12.1 mA	N/A
3.2.4.2.2.7 (3)	Cold cal	13.9 mA	N/A
3.2.4.2.2.7 (4)	Nadir	19.3 mA	N/A
3.2.4.2.2.7 (5)	Warm cal (motors off)	.002 mA	N/A

Circle Test: FINAL CPT LPT

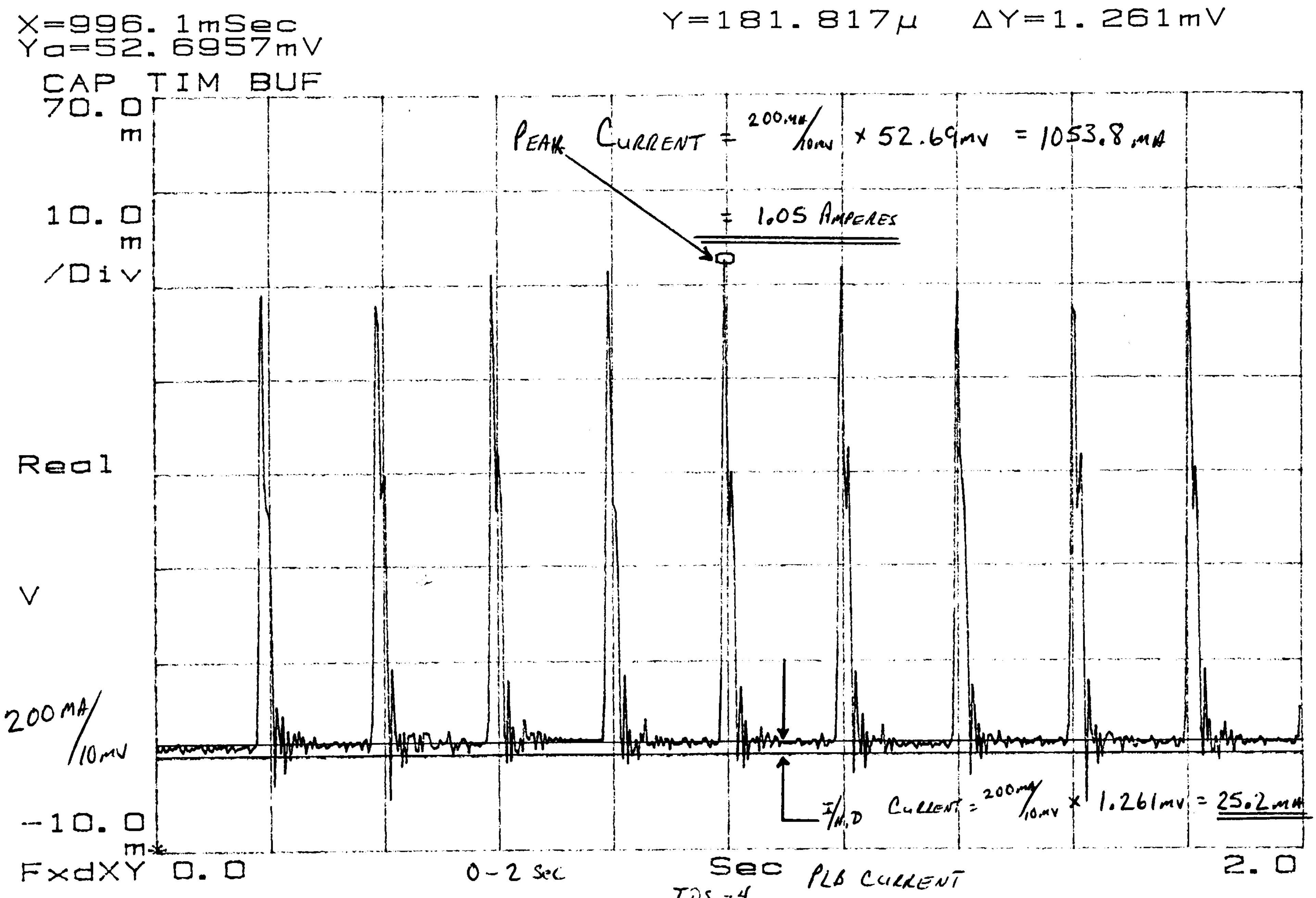
OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-14-00 Date

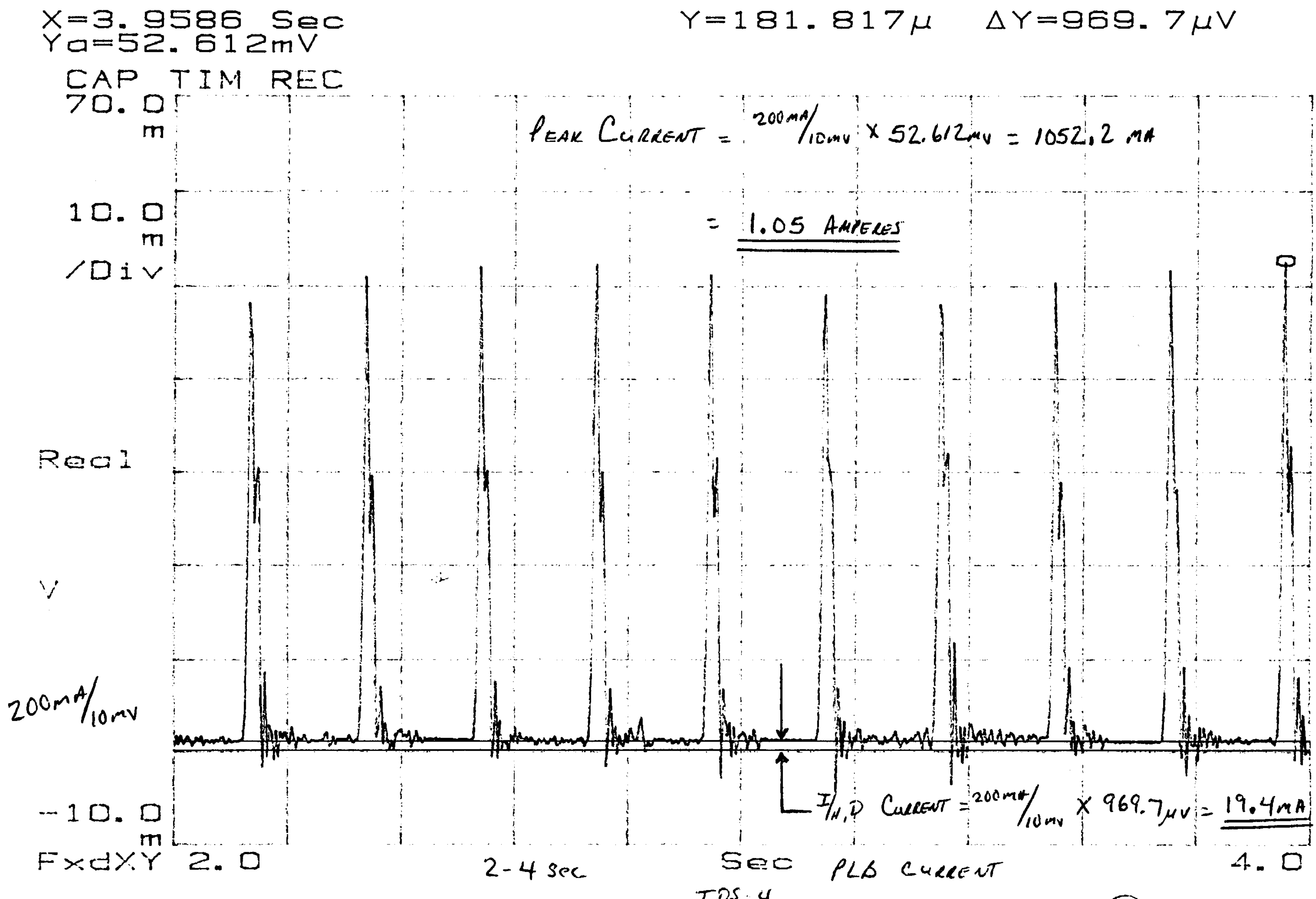
Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 7/15/00 Date



S/O: 787920 OP: 0830 3.2.4.2.2.1 TEST ENG (139 T) DATE: 7/14/00

P/N: 131720-3-TST SN: 109 FINAL CPT QUALITY [signature] 7/15/00

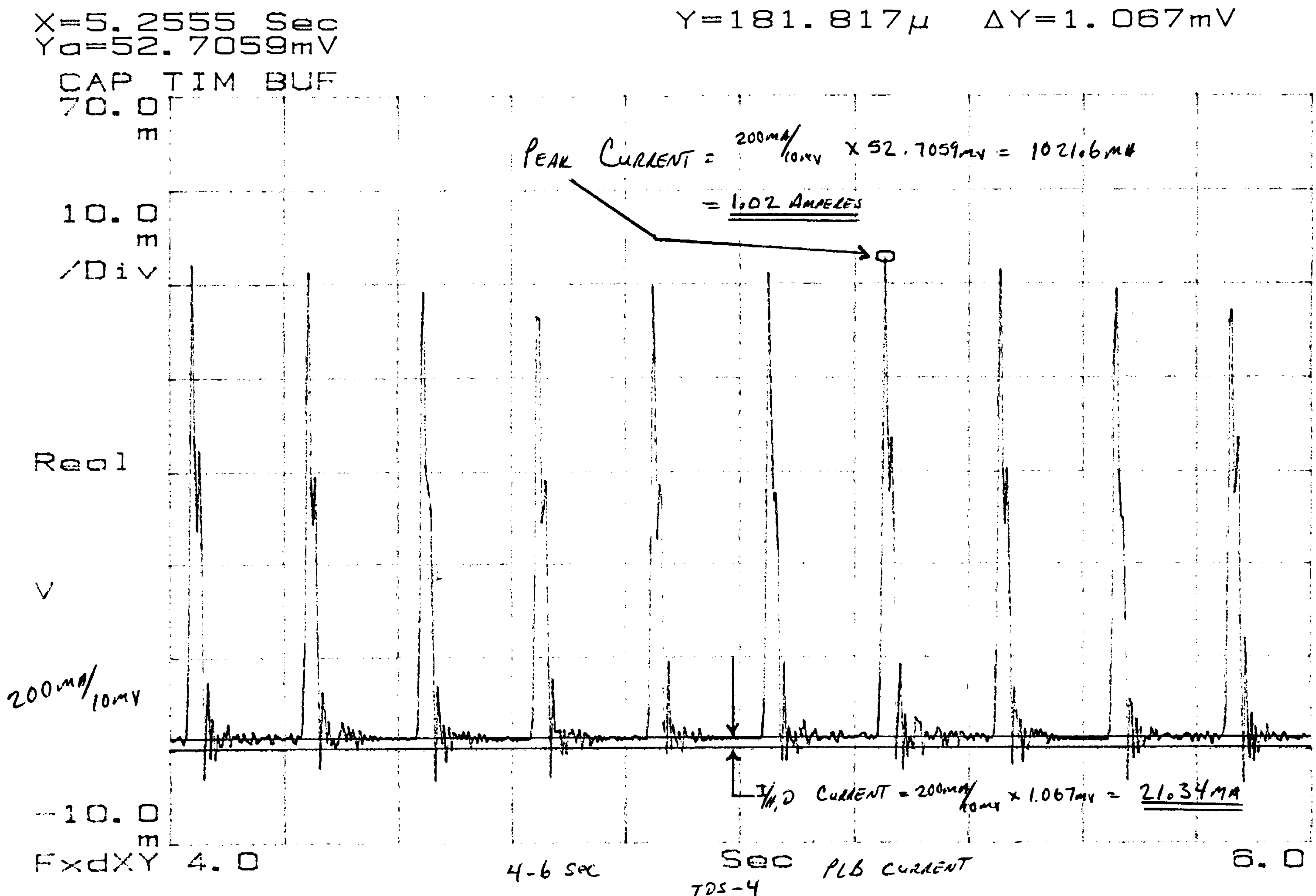


S/O: 787920 OP: 0830 3.2.4.2.2.2

P/N: 17 1720-3-TST SN: 109 FINAL (PT

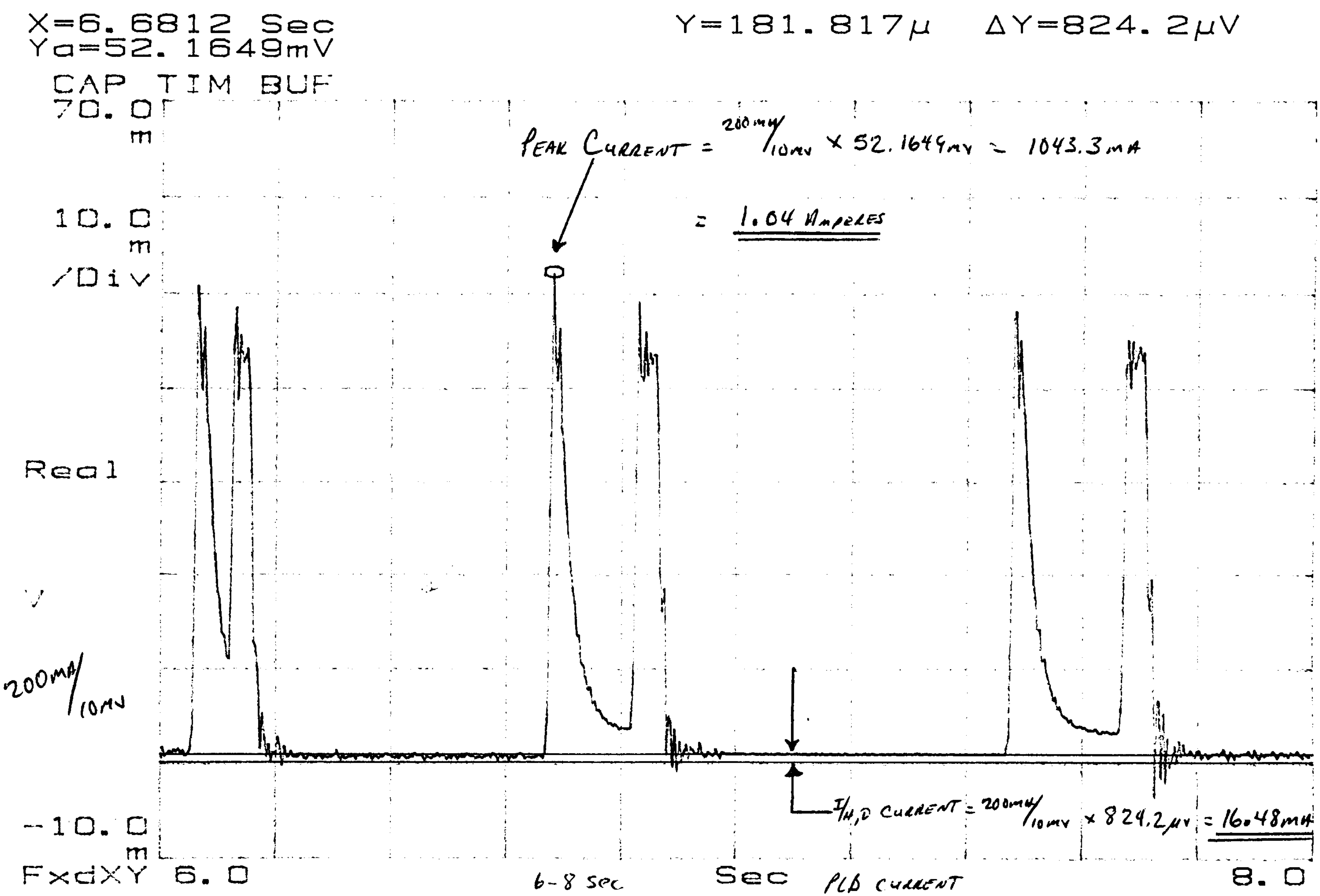
TEST ENG: 139 T DATE: 7/14/00

QUALITY 7/15/



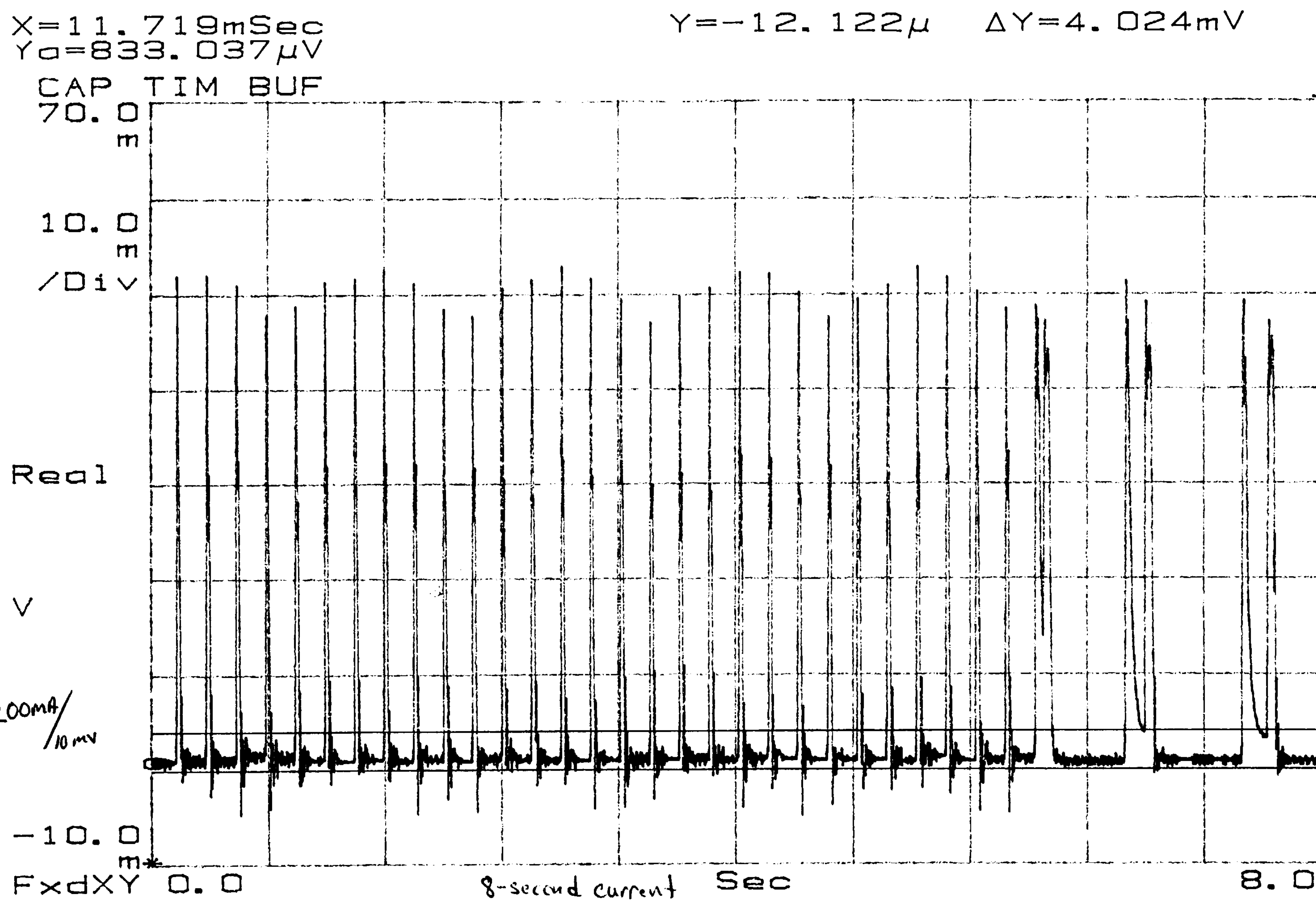
S/O: 787920 OP: 0830 3.2.4.2.2.3 TEST ENG: 139 T DATE: 7/14/00

P/N: 133720-3-TST SN: 109 FINAL CPT QUALITY 7/15/



S/O: 787920 OP: 0830 TDS-4 3.2.4.2.2.4 TEST ENG: (139 T) DATE: 7/14/00

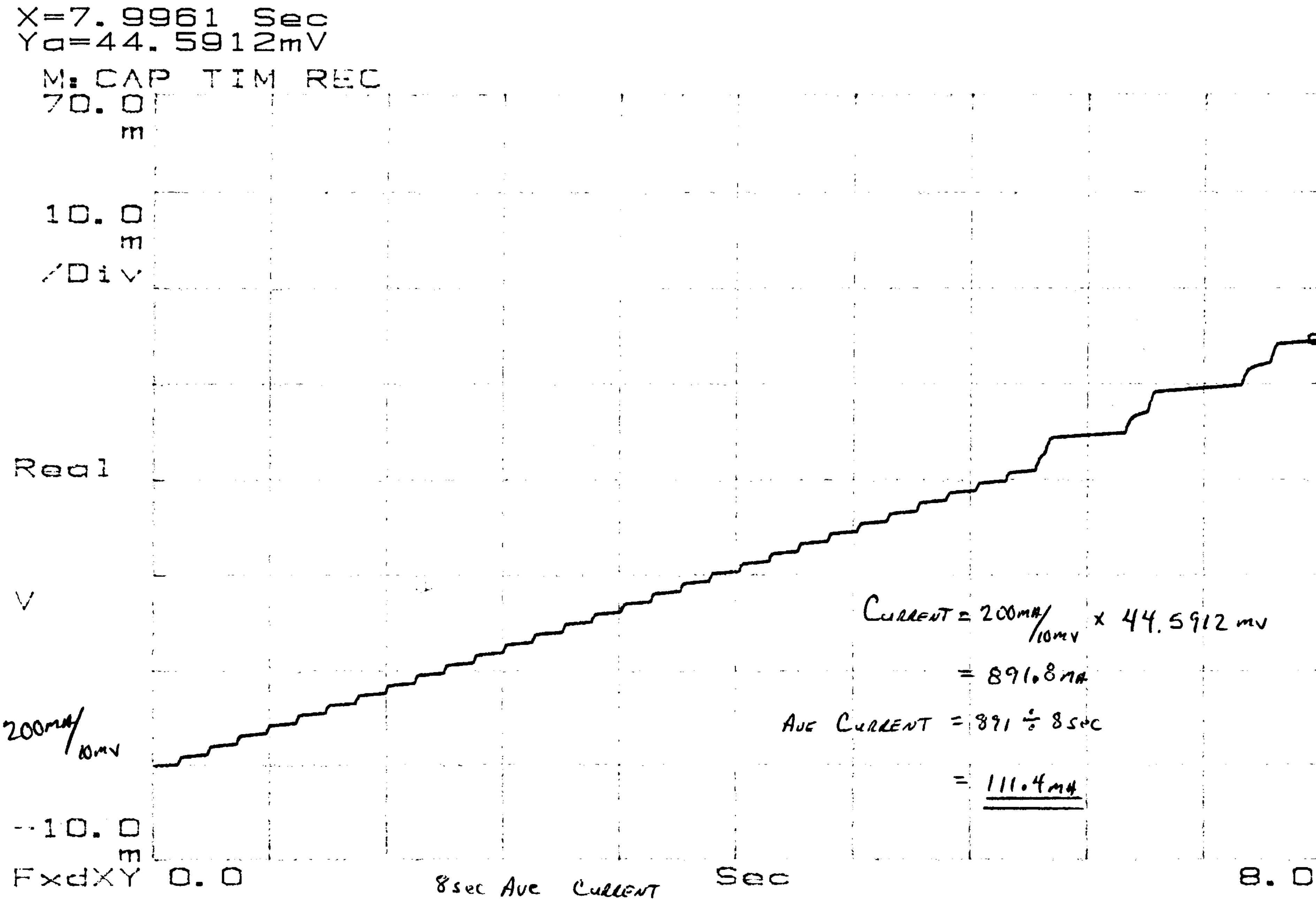
P/N: 13 720-3-TST SN: 109 FINAL PT QUALITY: [signature] 7/15/00



S/O: 787920 OP: 0830 324.2.2.5 TDS4 TEST ENG: _____ DATE: 7/14/00

P/N: 133/720-3-TST SN: 109 FINAL CPT Quality Judie Wagner 7/15/00

139 T



Current = 200mA/10mV × 44.5912 mv

= 891.8mA

Ave Current = 891 ÷ 8 sec

= 111.4mA

8 sec Ave Current

TDS-4

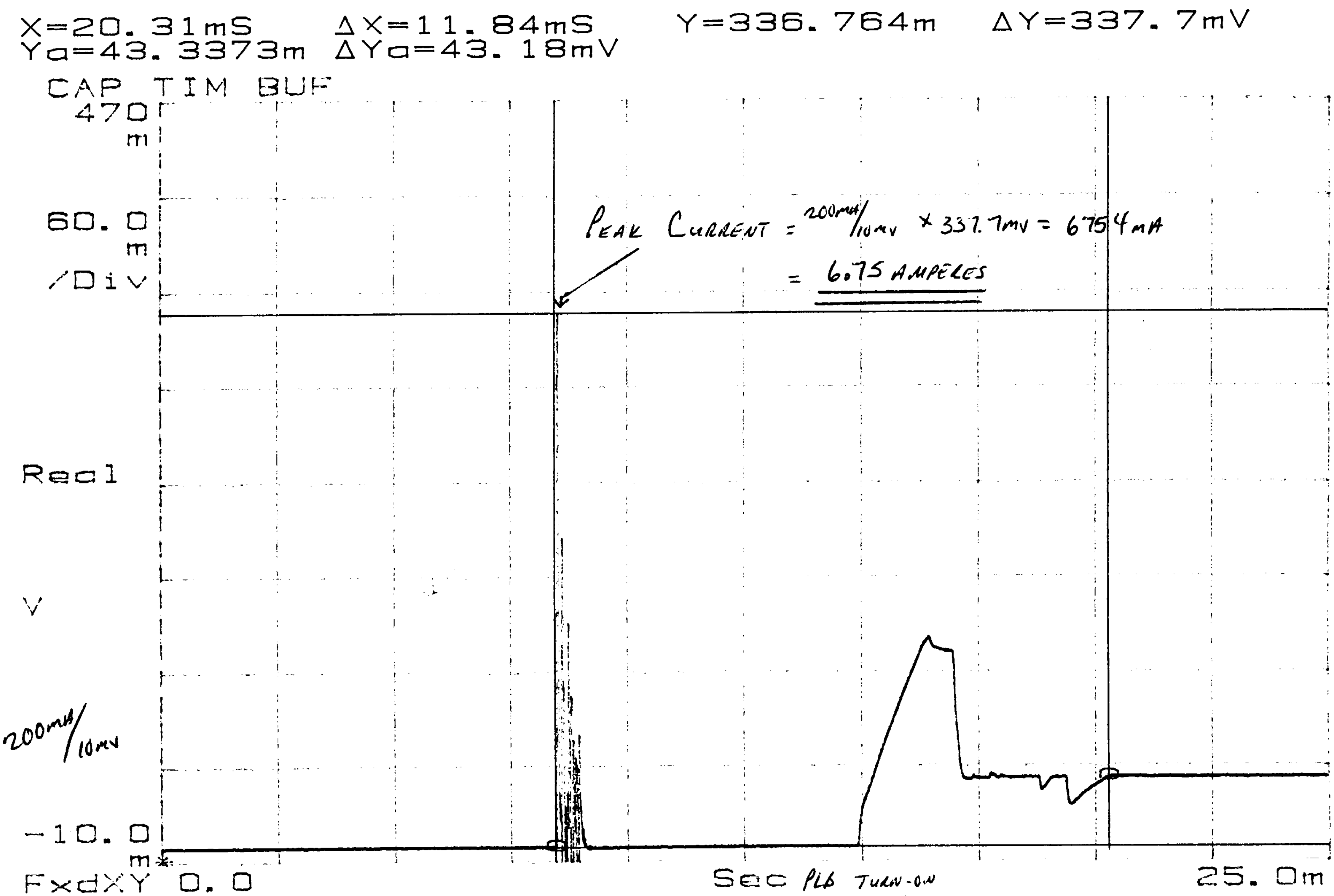
S/O: 787920 OP: 0830

3.2.4.2.2.5

P/N: 13 '720-3-TST SN: 109 FINAL PT

TEST ENG: 139 T DATE: 7/14/00

QUALITY 7/15/00



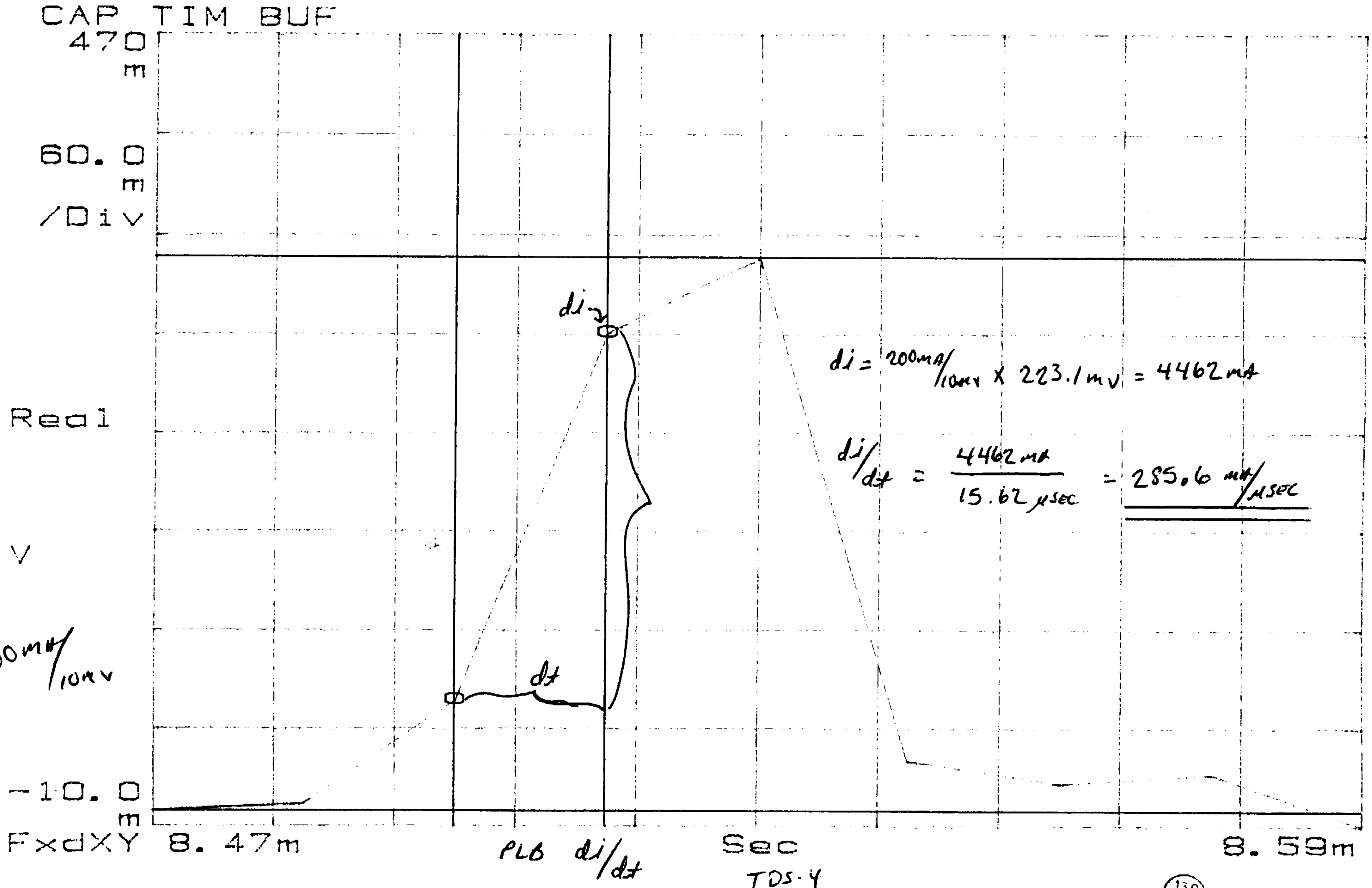
TDS-4

S/O: 787920 OP: 0830 3.2.4.2.2.6 TEST ENG: DATE: 7/14/00

P/N: 133720-3-TST SN: 109 FINAL CPT QUALITY [signature] 7/15/00

139 T

X=8.516mS ΔX=15.62μS Y=336.764m ΔY=337.7mV
Ya=290.95m ΔYa=223.1mV



S/O: 787920 OP: 0830 3.2.4.2.2.6 TEST ENG: DATE: 7/14/00

P/N: 13 720-3-TST SN: 109 FINAL PT QUALITY [signature] 7/15/00

TEST DATA SHEET 5
+28 V Analog Telemetry Bus (Paragraph 3.2.4.2.3)

Step	Parameter	Measured/ Calculated	Required	Pass/ Fail
3	+28 V ATB Bus Voltage (V_{at}) (Measured)	27.96 Volts	28.0 ±0.5	P
4	Av. Current (I_a)	1.8 mA	7 mA max	P
5	+28 V ATB Operating Power = I_a X V_{at}	50.36 mW	200 mW max	P

Circle Test: FINAL CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00
Date

Customer Representative (Flight Hardware Only) 7-15-00
Date

Quality Control 7-15-00
Date

TEST DATA SHEET 6
+10 V Interface Bus Voltage (Paragraph 3.2.4.2.4)

Step	Parameter	Measured/ Calculated	Required	Pass/ Fail
3	Av. Current (I_a)	6.3 mA	10 mA max	P
3	+10 V Interface Bus (V_{ib}) (Measured)	8.34 Volts	9.0 ±1.0 V	P
4	+10 V Interface Bus Power = I_a X V_{ib}	52.5 mW	100 mW max	P

Circle Test: FINAL CPT LPT

OP: 0830

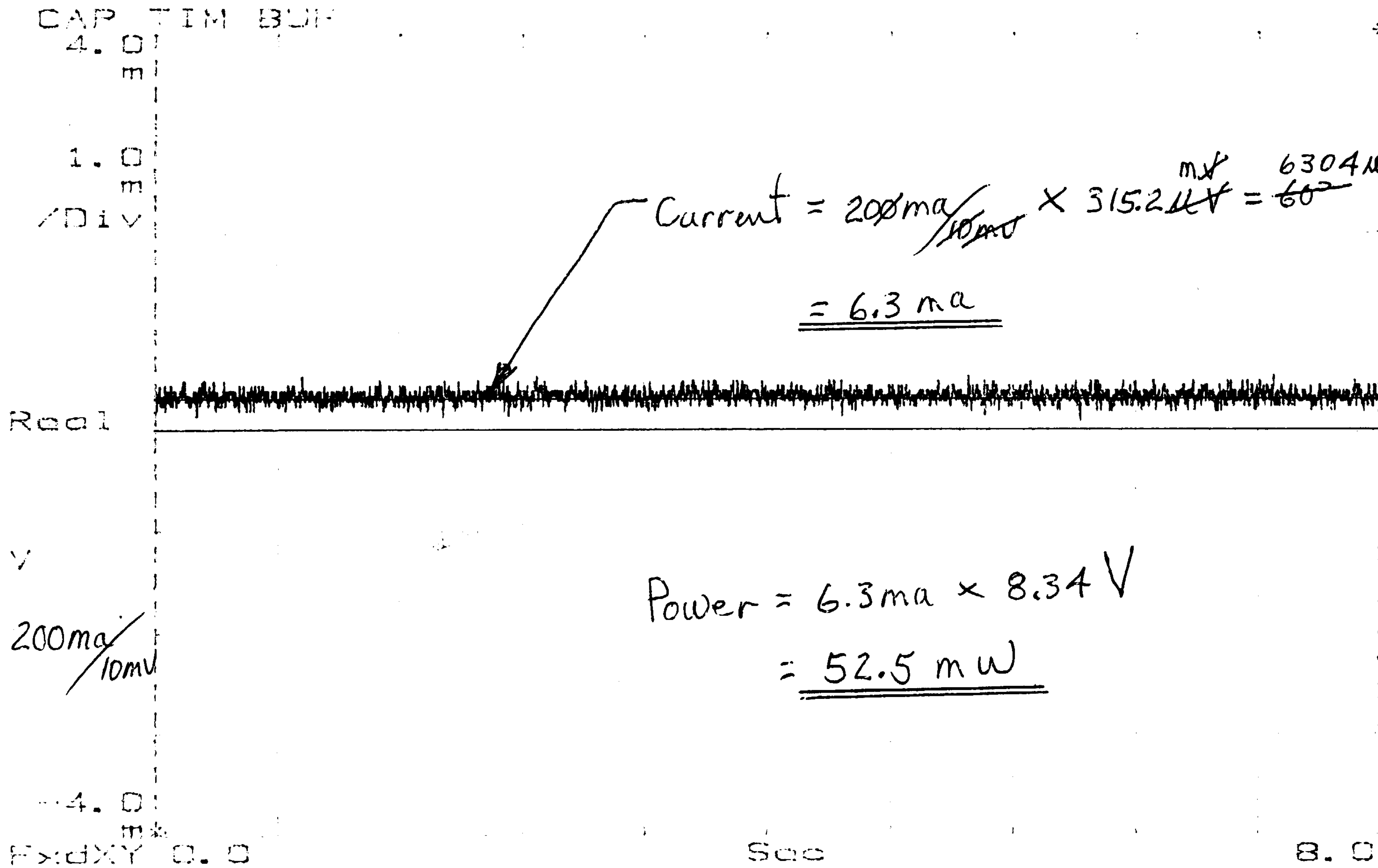
METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ray Hertzberg 7-15-00
Test Systems Engineer Date

J. Sanford 7-15-00
Customer Representative Date
(Flight Hardware Only)

Judith Hervey 7/15/00
Quality Control Date

Y=324.847μ   ΔY=315.2μV



Current = 200ma/~~10mv~~ × 315.2 m~~V~~ = 6304 ma/~~60~~

= 6.3 ma

Power = 6.3ma × 8.34 V

= 52.5 mW

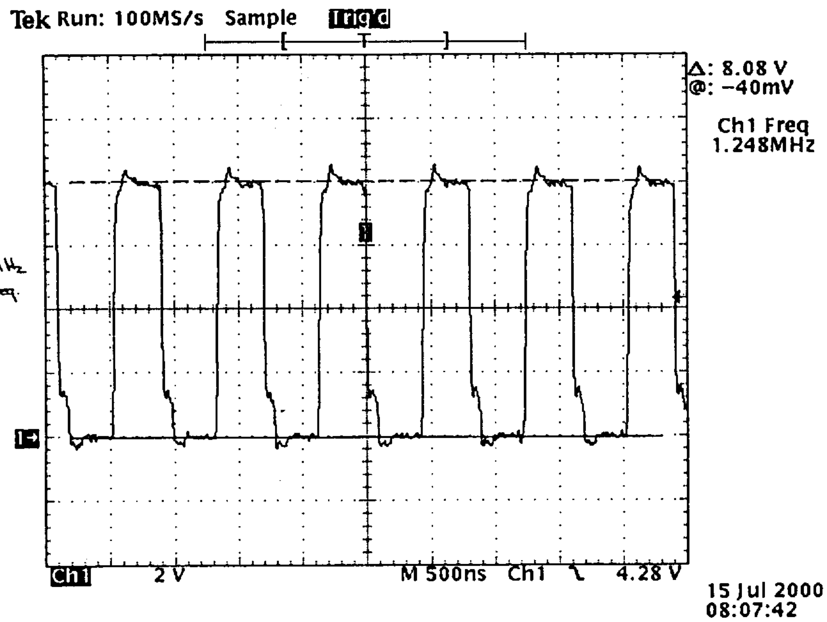
+10V INTERFACE BUS

S/O: 787920   OP: 0830   3.2.4.2.4.1   TDS-6   TEST ENG: [signature] DATE: 7-15-00

P/N: 133720-3-TST   SN: 109   FINAL CPT   QUALITY: [signature] 7/15/00

TEST DATA SHEET 8
1.248 MHz Clock Signal Verification (Paragraph 3.2.4.3.2.1)

1.248MHz Clock Freq.



3.2.4.3.2.1
TDS 8

S/O: 787720 OP: 0830
P/N: 1331720-3-TST SN: 109 FINAL CPT

TEST ENG: DATE: 7-15-00
QUALITY 7-15-00

Step	Parameter	Measured/ Calculated	Required	Pass/ Fail
5	Clock Frequency	1.248 MHz	1.248 ±10%	PASS
	Clock Amplitude	8.08 Volts	9.0 ±1.0 V	PASS

Circle Test: FINAL CPT LPT

Op 0830

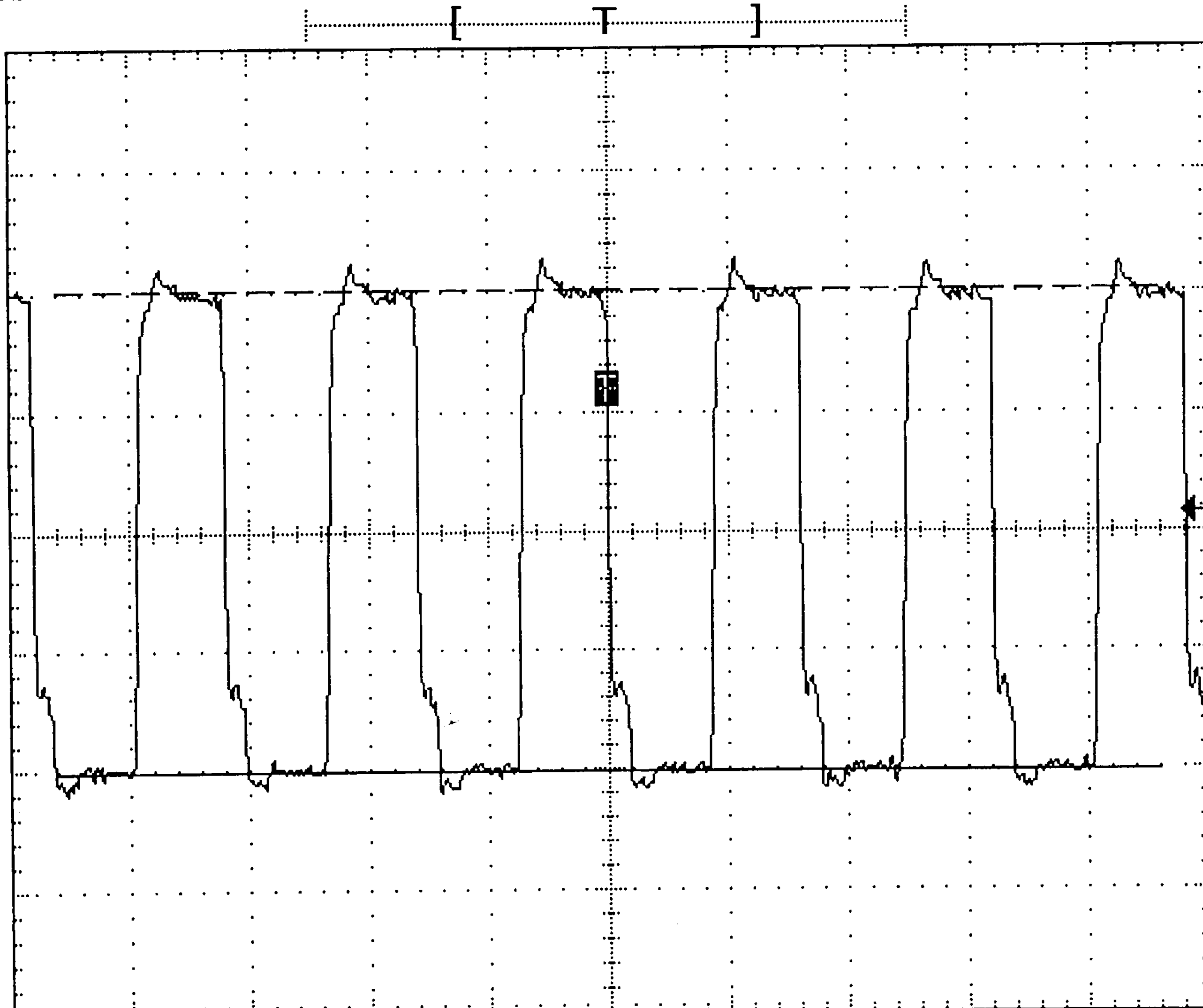
METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative 7-15-00 Date
(Flight Hardware Only)

Quality Control 7-15-00 Date

Tek Run: 100MS/s Sample Trig'd



1.248MHz
Clock Freq.

15 Jul 2000
08:07:42

3,24,3,2,1

TDS 8

S/O: 787920 OP: 0830

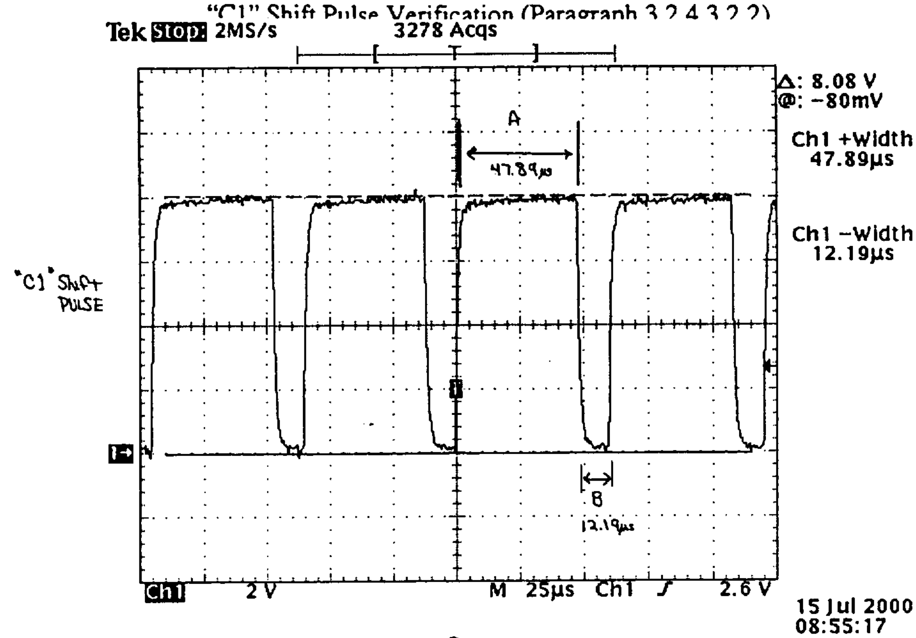
P/N: 131720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY [signature] 7-15-00

TEST DATA SHEET 9

"C1" Shift Pulse Verification (Paragraph 3.2.4.3.2.2)



3.24322
TDS 9

S/O: 787920 OP: 0830
P/N: 1331720-3-TST SN: 109 FINAL CPT
TEST ENG DATE: 7-15-00
QUALITY 7-15-00

			s/ Fail
Pulse Timing (A) *	47.89 µs	48 µs ± 10%	PASS
Pulse Timing (B) *	12.19 µs	12 µs ± 10%	PASS
Pulse Amplitude	8.08 Volts	9.0 ± 1.0 V	PASS

* Refer to Figure 19 for location of the pulse timing A and B.

Circle Test: FINAL CPT LPT

Op. 0830

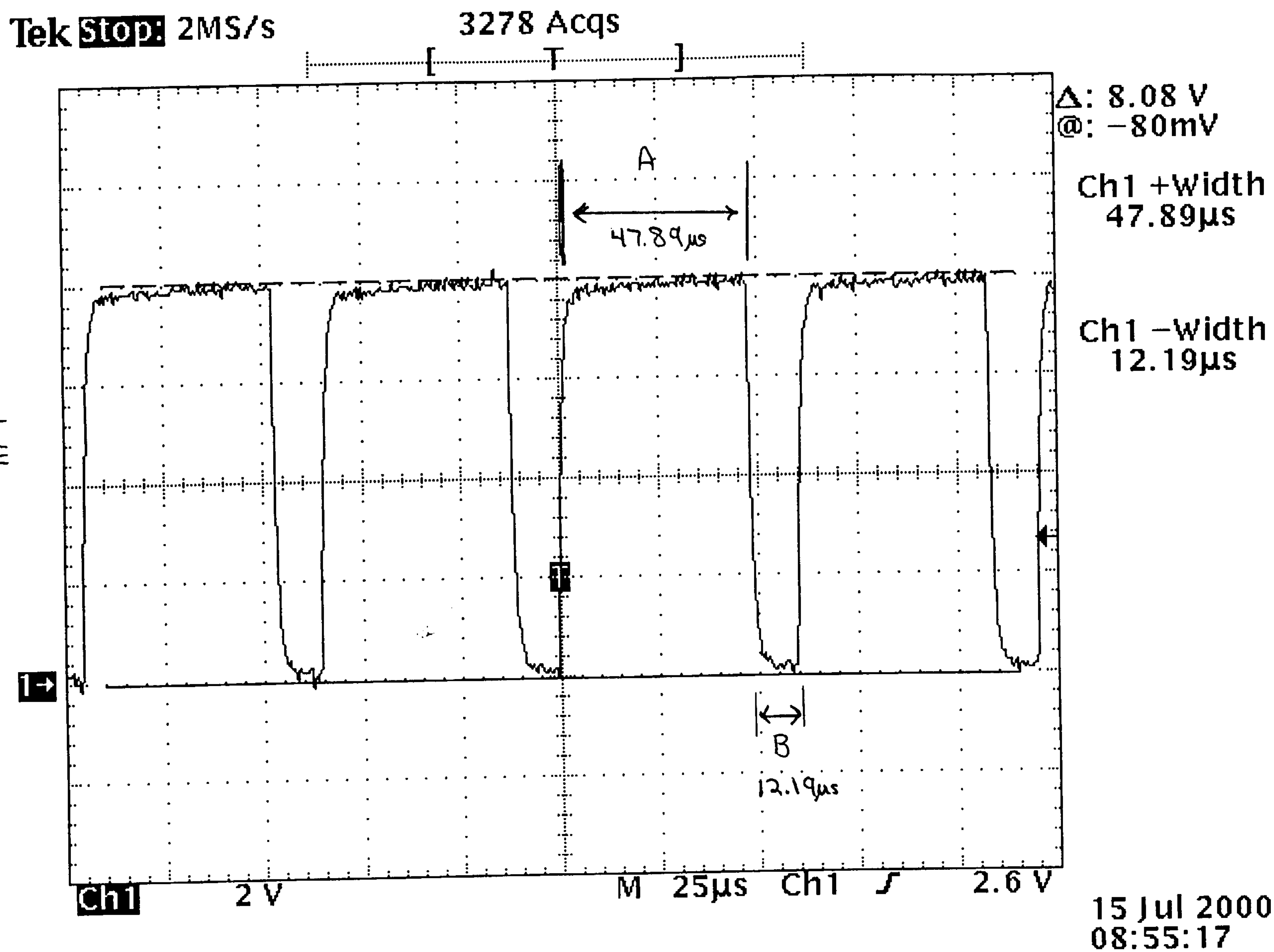
METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00
Date

Customer Representative (Flight Hardware Only) 7-15-00
Date

Quality Control 7-15-00
Date

"C1" Shift PULSE



3.24322

TDS 9

S/O: 787920 OP: 0830

P/N: 133720-3-TST SN: 109

FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

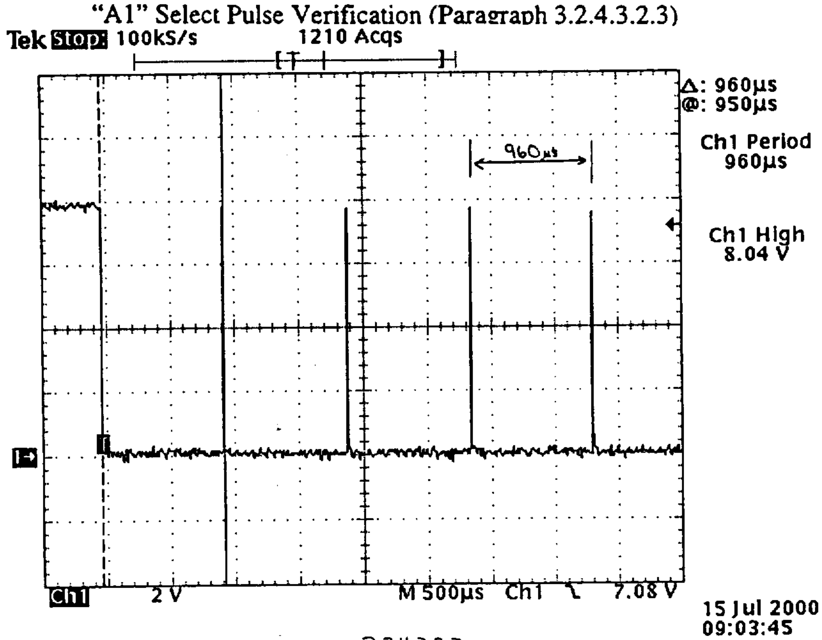
QUALITY [signature] 7-15-00

AE-26156/3C
6 Apr 99

TEST DATA SHEET 10

"A1" Select Pulse Verification (Paragraph 3.2.4.3.2.3)

A1 Select Pulse



3.2.4.3.2.3

S/O: 787920 OP: 0830 TDS 10 TEST ENG: DATE: 7-15-00
P/N: 1331720-3-TST SN: 109 FINAL CPT QUALITY: 7-15-00

	Calculated		
Select Pulse Timing (F) *	960.0 µs	961.5 µs± 10%	P
Select Pulse Amplitude	8.04 Volts	9.0 ±1.0 V	P

* Refer to Figure 13 for location of the pulse timing F

Circle Test: Final CPT LPT

Op 0830

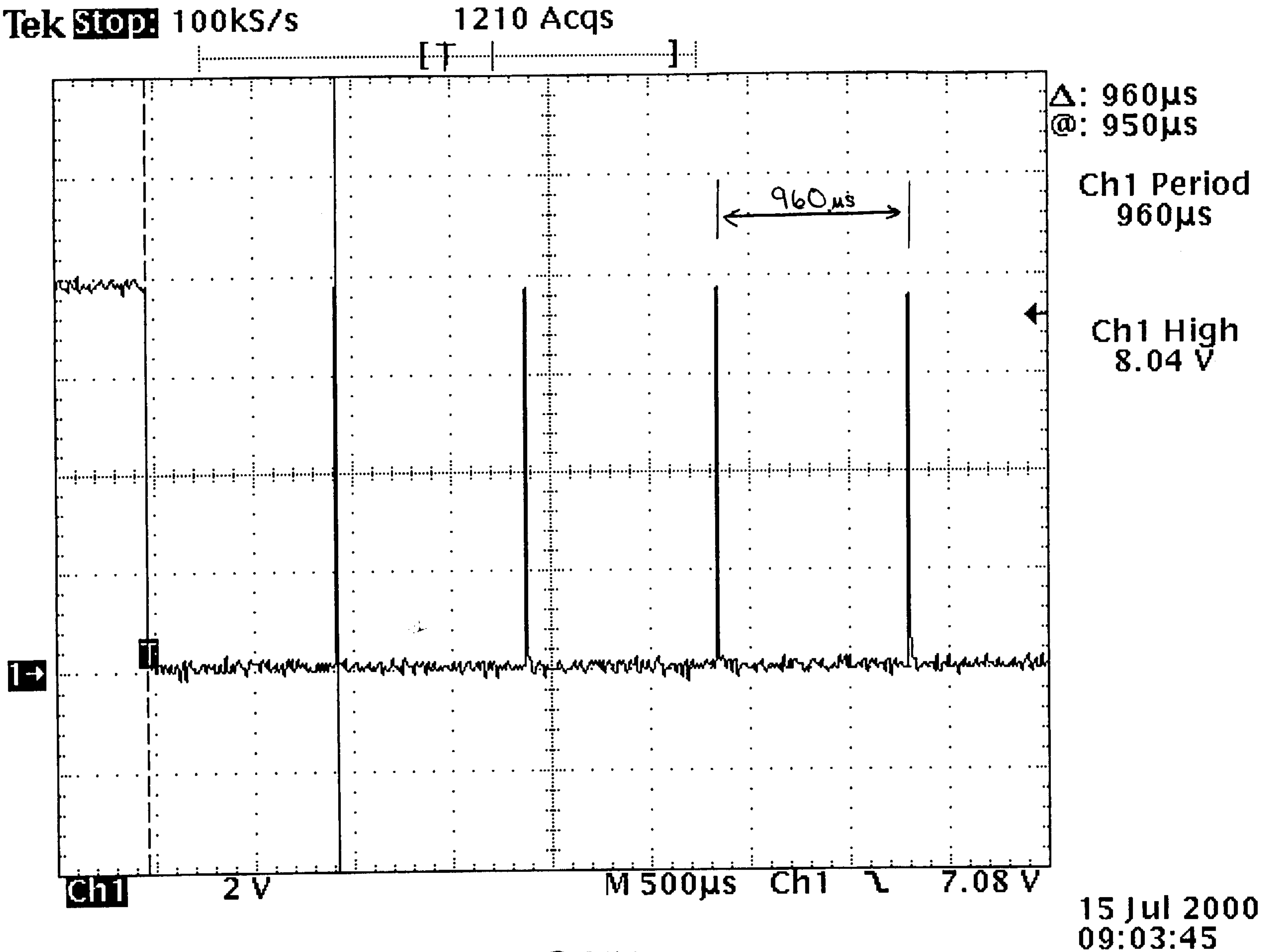
METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer Date 7-15-00

Customer Representative (Flight Hardware Only) Date 7-15-00

Quality Control Date 7-15-00

A1 Select Pulse



3.2.4.3.2.3

TDS 10

S/O: 787920 OP: 0830

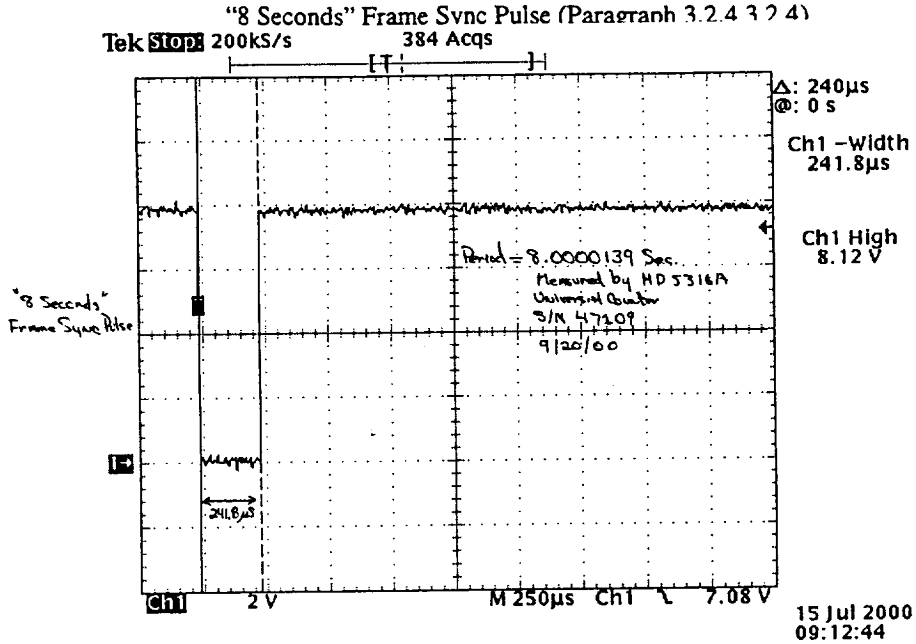
P/N: 133720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY: [signature] 7-15-00

TEST DATA SHEET 11

"8 Seconds" Frame Sync Pulse (Paragraph 3.2.4.3.2.4)



3.24324

S/O: 787920 OP: 0830 TDS 11 TEST ENG: [signature] DATE: 7-15-00
P/N: 1331720-3-TST SN: 109 FINAL CPT QUALITY: [signature] 7-15-00

Step		Calculated		Pass/ Fail
1*	Frame Sync Pulse Timing (G)*	8.0 Sec	8 Sec ±10%	PASS
	Frame Sync Pulse Timing (C)*	241.8 µs	240.4 µs ±10%	PASS
	Frame Sync Pulse Amplitude	8.12 Volts	9.0 ±1.0 V	PASS

* Refer to Figure 13 for location of the timing pulses for G and C.

Circle Test: Final CPT LPT

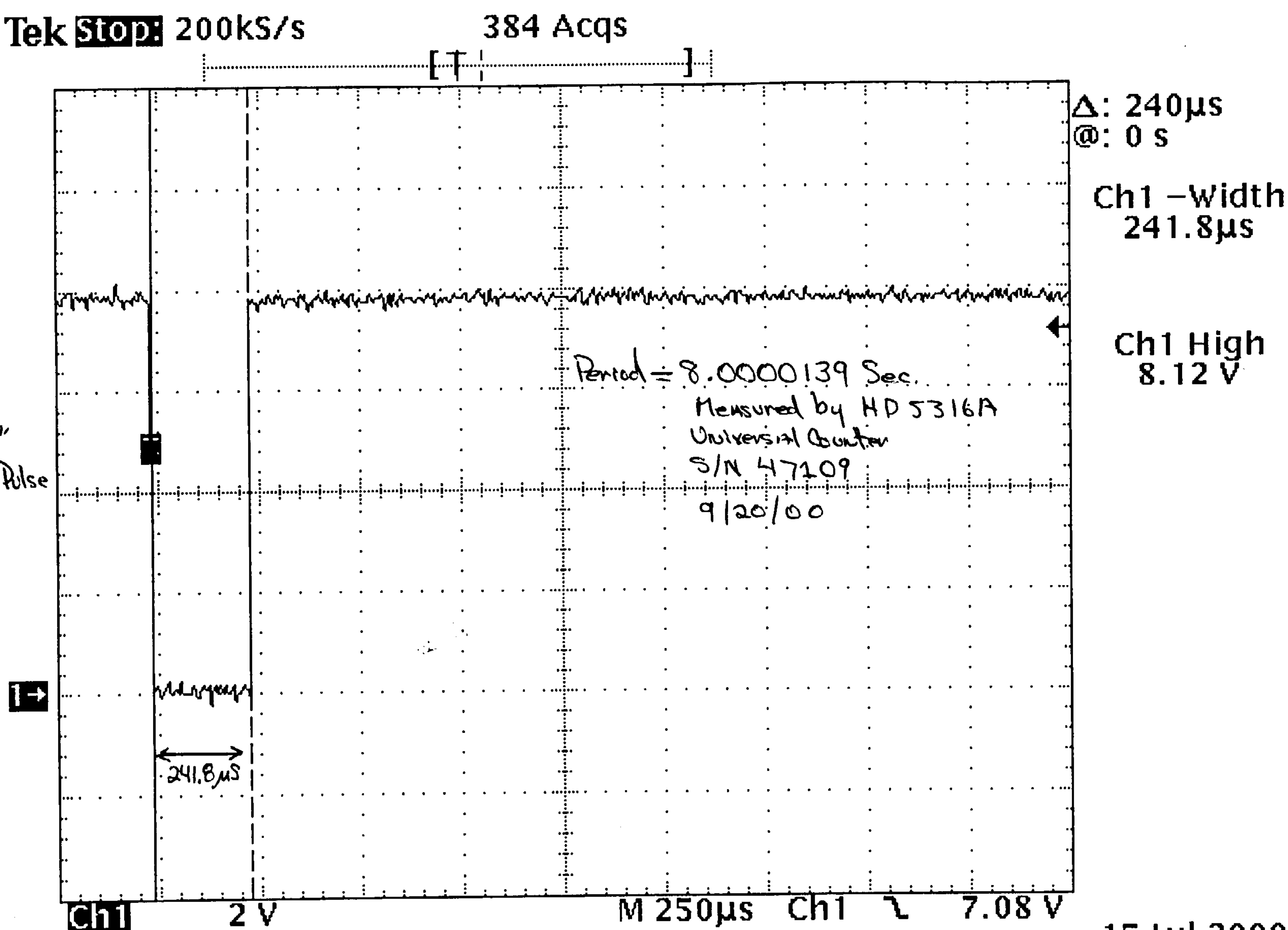
Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-15-00
Test Systems Engineer Date

[signature] 7-15-00
Customer Representative Date
(Flight Hardware Only)

[signature] 7-15-00
Quality Control Date



15 Jul 2000
09:12:44

3.24.3.24

S/O: 787920 OP: 0830 TDS 11 TEST ENG: [signature] DATE: 7-15-00

TEST DATA SHEET 12 (Sheet 1 of 2)
Synchronization Signals Relationship (Paragraph 3.2.4.3.2.5)

A1 Select pulse and the 8 seconds Frame sync pulse.

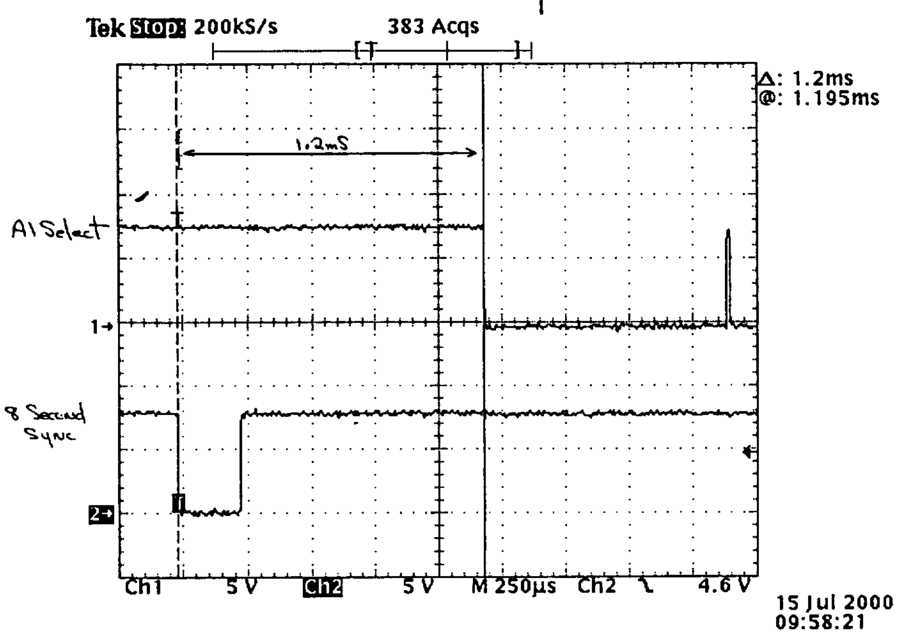
Verify that the sync pulse between H and C is as shown in Figure 19.

TIME MEASURED: 1.2mS

TIME REQUIRED: 1.2 ms ±10%

PASS/FAIL PASS

ATTACH PHOTOGRAPH OR PLOT HERE



3.2.4.3.25
S/O: 787920 OP: 0830 TDS 12 (Sheet 1 of 2) TEST ENG: DATE: 7-15-00
P/N: 1331720-3-TST SN: 109 FINAL CPT QUALITY 7-15-00

Circle Test: Final CPT LPT

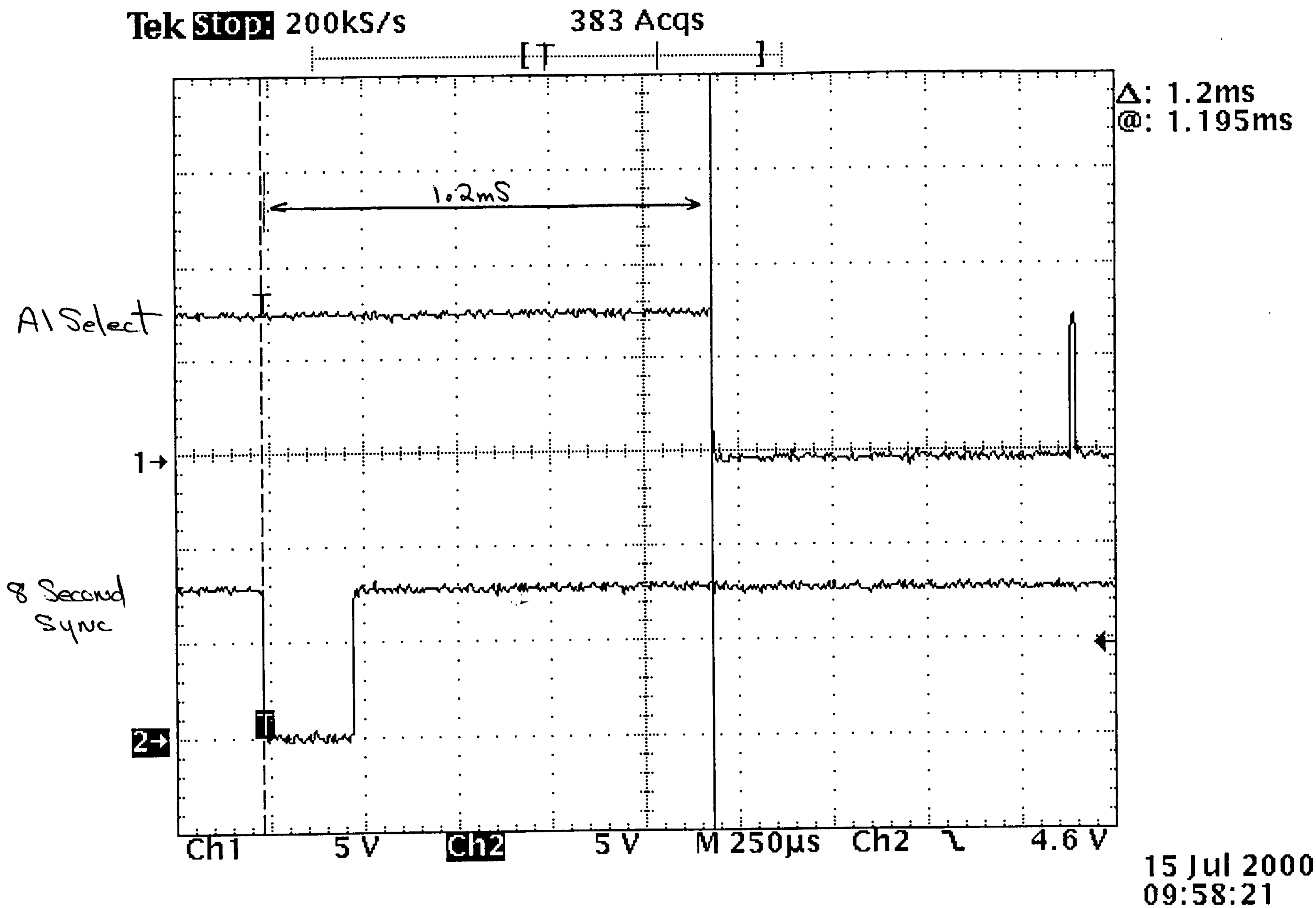
Op 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 7-15-00 Date



3.2.4.3.25

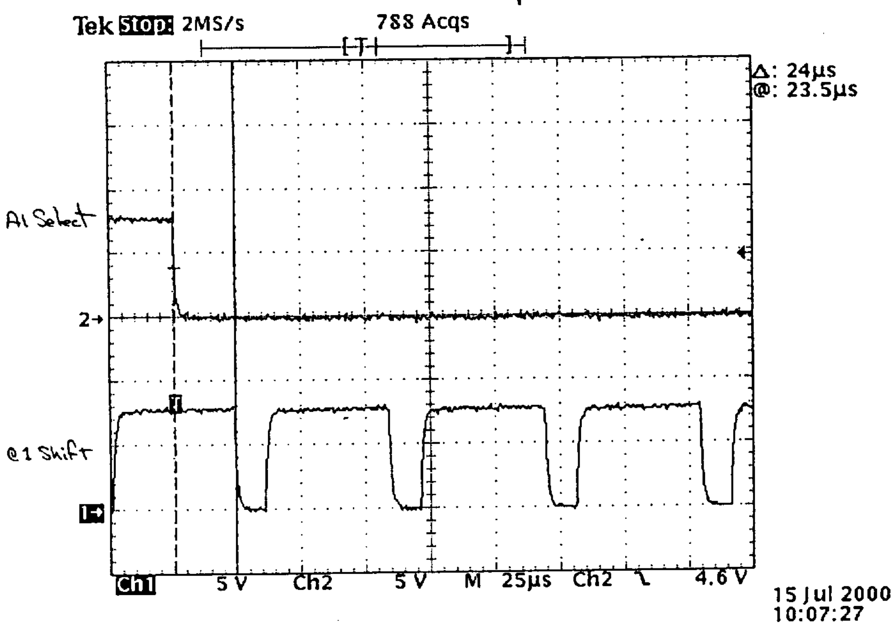
S/O: 787920 OP: 0830 TDS 12 (Sheet 1 of 2) TEST ENG: [signature] DATE: 7-15-00

P/N: 133720-3-TST SN: 109 FINAL CPT QUALITY: [signature] 7-15-00

TEST DATA SHEET 12 (Sheet 2 of 2)
Synchronization Signals Relationship (Paragraph 3.2.4.3.2.5)

A1 Select pulse and the C1 Shift pulse.

ATTACH PHOTOGRAPH OR PLOT HERE



Verify that the sync pulse between I and E is as shown in Figure 19.

TIME MEASURED: 24.0µS

TIME REQUIRED: 24 µs ±1 µs

PASS/FAIL PASS

3.2.4.3.2.5

S/O: 787920 OP: 0830 TDS12 (Sheet 2 of 2) TEST ENG: DATE: 7-15-00
P/N: 1331720-3-TST SN: 109 FINAL CPT QUALITY 7-15-00

Circle Test: FINAL CPT LPT

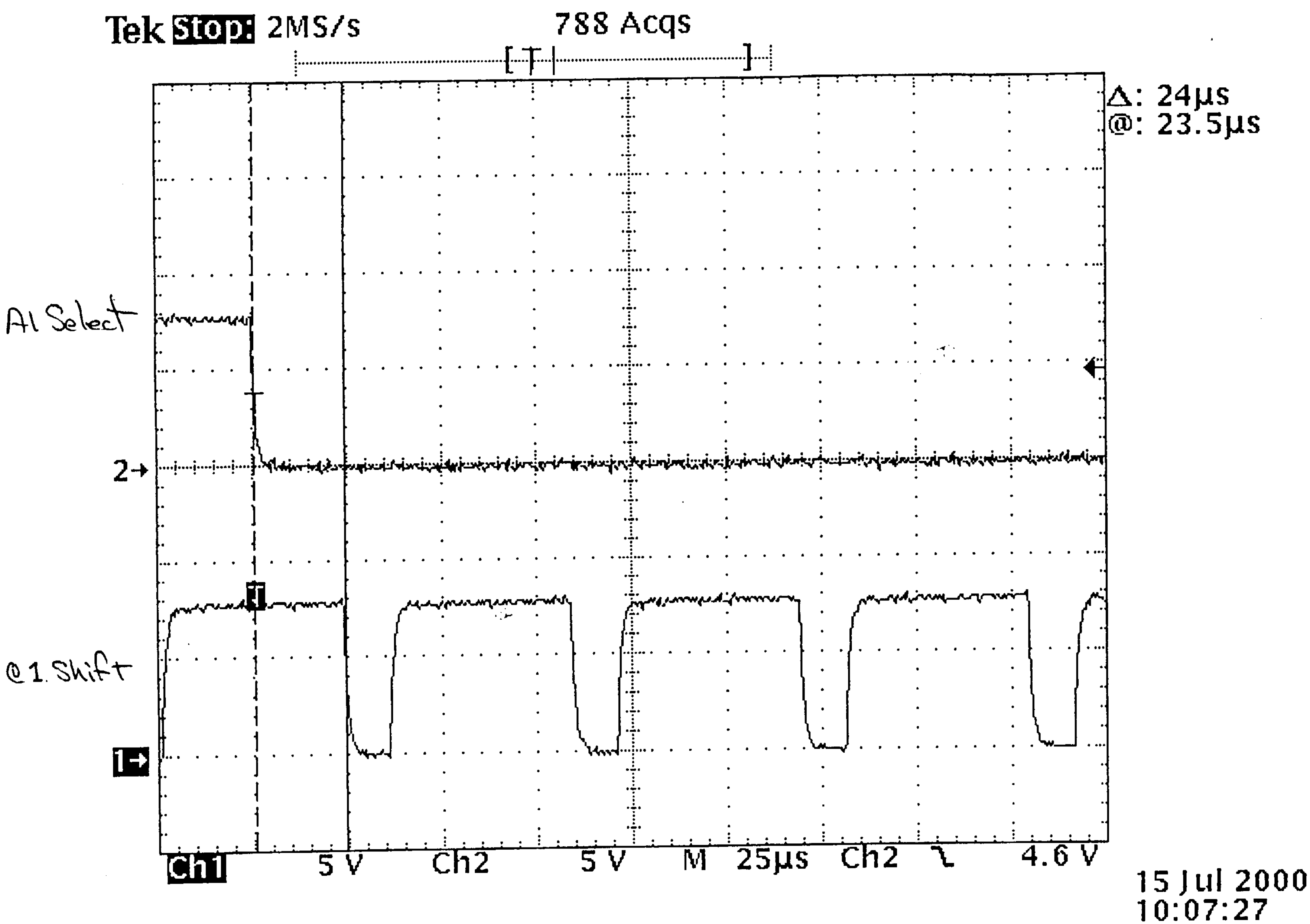
Op 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 7-15-00 Date



3.24.3.2.5

S/O: 787920 OP: 0830 TDS12 (Sheet 2 of 2) TEST ENG: [signature] DATE: 7-15-00

P/N: 133/720-3-TST SN: 109 FINAL CPT QUALITY: [signature] 7-15-00

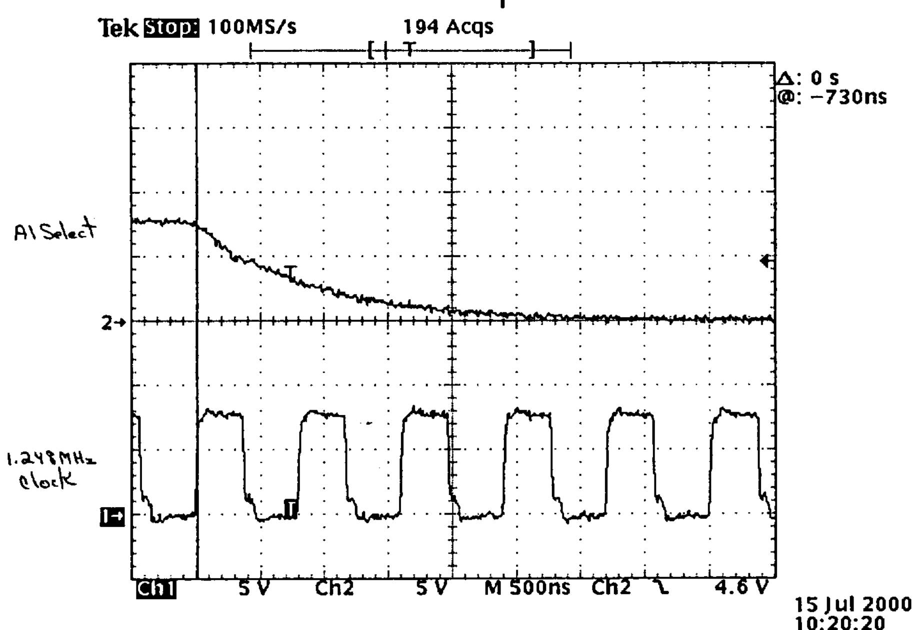
TEST DATA SHEET 13
Synchronization Signals Relationship (Paragraph 3.2.4.3.2.5)

A1 Select pulse and the 1.248 MHz clock.

ATTACH PHOTOGRAPH OR PLOT HERE

Verify that the sync pulse between I and J is as shown in Figure 19.

PASS/FAIL PASS



3.24.3.2.5

S/O: 787920 OP: 0830 TDS 13 TEST ENG: [signature] DATE: 7-15-00
P/N: 1331720-3-TST SN: 109 FINAL CPT QUALITY [signature] 7-15-00

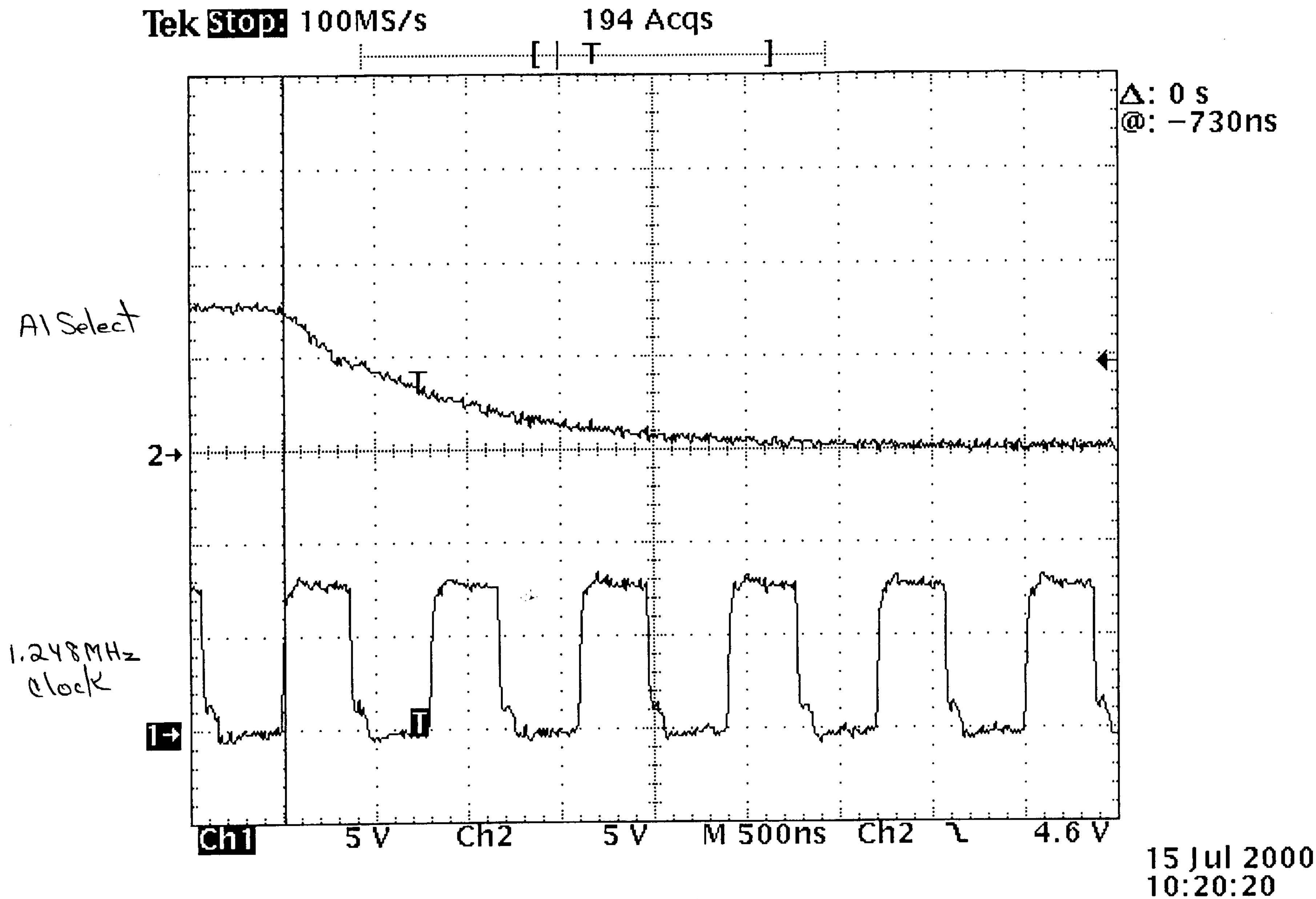
Circle Test: Final CPT LPT

Op 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-15-00
Test Systems Engineer Date

[signature] 7-15-00 [signature] 7-15-00
Customer Representative Date Quality Control Date
(Flight Hardware Only)



3,24, 3,25

S/O: 787920 OP: 0830 TDS 13

P/N: 131720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY: [signature] 7-15-00

TEST DATA SHEET 14

Commands and Digital-B Telemetry Verification (Paragraphs 3.2.4.3.3.1, 3.2.4.3.3.2, 3.2.4.3.3.3, and 3.2.4.3.3.4)

Test	Digital-B Commands Verification Via STE			Visual Inspection		Pass/Fail
	Command	Observed	Required	Observed	Required	
3.2.4.3.3.1 Module Totally Off	Scanner A1-1	OFF	OFF	TO WARM LOAD	Antenna pointing to warm load.	P
	Scanner A1-2	OFF	OFF	TO WARM LOAD	Antenna pointing to warm load.	P
	Module Power	DISCONNECT	Disconnect	N/A	N/A	P
	Survival Htr. Power.	OFF	OFF	0.0 A	28 V supply current=0	P
3.2.4.3.3.2 Survival Heater Power	Survival Heater ON	ON	ON	N/A	N/A	P
	Survival Heater OFF	OFF	OFF	N/A	N/A	P
3.2.4.3.3.3 Module Power Connect	Module Power	CONNECT	Connect	2.2 A	+28 V DC current is between 0.5 and 3.2 amps.	P
3.2.4.3.3.4 PLL Power	PLLO#2	PLLO#2	PLLO#2	N/A	N/A	P
	PLLO#1	PLLO#1	PLLO#1	N/A	N/A	P

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 609

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) J. Sanford 7-15-00 Date

Quality Control 7-15-00 Date

TEST DATA SHEET 15
Scanner Commands Verification (Paragraph 3.2.4.3.3.5, Step 1)

Test	Digital "B" Verification			Pass/Fail
	Command	Observed	Required	
Full Scan	1 Module Power	CONNECT	CONNECT	P
	2 Survival Heater	OFF	OFF	P
	3 Scanner A1 Power	ON	ON	P
	4 Scanner A2 Power	ON	ON	P
	5 Antenna Warm Cal Pos.	NO	NO	P
	6 Antenna Cold Cal Pos.	NO	NO	P
	7 Antenna NADIR Position	NO	NO	P
	8 Antenna Full Scan	YES	YES	P
	9 PLL Power	PLLO#1	PLL#1	P
	10 Cold MSB	0	0	P
	11 Cold LSB	0	0	P

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-15-00
Test Systems Engineer Date

J. Safford 7-15-00
Customer Representative (Flight Hardware Only) Date

[signature] 269 7-15-00
Quality Control Date

FULL SCAN MODE

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
1090	SCAN MOTOR A1-1	18410	24.34
1092	SCAN MOTOR A1-2	19700	25.62
1094	FEEDHORN A1-1	20371	27.52
1096	FEEDHORN A1-2	21410	29.50
1098	RF MUX A1-1	22213	30.58
1100	RF MUX A1-2	23318	32.71
1102	LOCAL OSCILLATOR CHANNEL 3	24451	34.85
1104	LOCAL OSCILLATOR CHANNEL 4	24509	34.63
1106	LOCAL OSCILLATOR CHANNEL 5	23898	33.97
1108	LOCAL OSCILLATOR CHANNEL 6	21687	29.94
1110	LOCAL OSCILLATOR CHANNEL 7	22808	31.86
1112	LOCAL OSCILLATOR CHANNEL 8	24094	34.07
1114	LOCAL OSCILLATOR CHANNEL 15	23966	33.54
1116	PLL LO #2 CHANNELS 9 THROUGH 14	15071	30.37
1118	PLL LO #1 CHANNELS 9 THROUGH 14	25202	36.37
1120	SPARE (NOT USED)	32767	51.27
1122	MIXER/IF AMPLIFIER CHANNEL 3	24022	33.19
1124	MIXER/IF AMPLIFIER CHANNEL 4	24023	33.41
1126	MIXER/IF AMPLIFIER CHANNEL 5	23595	32.97
1128	MIXER/IF AMPLIFIER CHANNEL 6	22418	31.05
1130	MIXER/IF AMPLIFIER CHANNEL 7	22600	31.64
1132	MIXER/IF AMPLIFIER CHANNEL 8	23860	33.41
1134	MIXER/IF AMPLIFIER CH 9 THRU 14	22380	30.48
1136	MIXER/IF AMPLIFIER CHANNEL 15	23395	33.40
1138	IF AMPLIFIER CHANNEL 11 THRU 14	23474	33.15
1140	IF AMPLIFIER CHANNEL 9	23501	33.27
1142	IF AMPLIFIER CHANNEL 10	23672	33.28
1144	IF AMPLIFIER CHANNEL 11	22240	30.81
1146	DC/DC CONVERTER	23627	33.31
1148	IF AMPLIFIER CHANNEL 13	22231	30.78
1150	IF AMPLIFIER CHANNEL 14	22329	30.75
1152	IF AMPLIFIER CHANNEL 12	22141	30.72
1154	RF SHELF A1-1	22258	31.82
1156	RF SHELF A1-2	23088	32.57
1158	DETECTOR/PREAMPLIFIER ASSEMBLY	20714	28.21
1160	A1-1 WARM LOAD 1	24232	24.77
1162	A1-1 WARM LOAD 2	24012	24.75
1164	A1-1 WARM LOAD 3	24217	24.78
1166	A1-1 WARM LOAD 4	24179	24.79
1168	A1-1 WARM LOAD CENTER	24252	24.90
1170	A1-2 WARM LOAD 1	24937	26.55
1172	A1-2 WARM LOAD 2	25078	26.48
1174	A1-2 WARM LOAD 3	25246	26.62
1176	A1-2 WARM LOAD 4	25013	26.63
1178	A1-2 WARM LOAD CENTER	24932	26.58
1180	TEMP SENSOR REFERENCE VOLTAGE	25331	

FULL SCAN MODE

PRT TEMPERATURES	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
VARIABLE TARGET	615	42.00	601	14.00
	616	43.00	602	15.00
	617	44.00	603	16.00
	618	45.00	604	17.00
	619	46.00	605	18.00
	620	47.00	606	19.00
	621	48.00	607	20.00
FIXED TARGET	622	49.00	608	21.00
	623	50.00	609	22.00
	624	51.00	610	23.00
	625	52.00	611	24.00
	626	53.00	612	25.00
	627	67.00	613	69.00
	628	68.00	614	70.00
BASEPLATE	629	71.00	630	72.00
	631	26.00	632	27.00

THERMOCOUPLE TEMPERATURES	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
FIXED TARGET SHROUD	558	5.00	537	34.00
	559	6.00	538	35.00
VARIABLE TARGET SHROUD	550	7.00	524	36.00
	551	8.00	525	37.00
FIXED TARGET N2	506	57.00	502	30.00
	507	58.00	503	31.00
VARIABLE TARGET N2	516	59.00	511	32.00
	517	60.00	512	33.00
HEATER N2	514	1.00	509	38.00
	515	2.00	510	39.00
FIXED TARGET FLOW METER	508	63.00	504	61.00
VARIABLE TARGET FLOW METER	518	64.00	513	62.00
BASEPLATE HEATER N2	519	3.00	520	4.00
BASEPLATE N2	521	9.00	522	10.00
BASEPLATE FLOW METER	523	65.00		
ADJUNCT RADIATORS	575	73.00	577	74.00
	579	75.00	581	76.00

AMSU A1-33 A1.EXE;62 FULL SCAN MODE P1 15-JUL-00 15:28:32 SCAN NUMBER 39

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 1

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	23	23	9	1233	1236	17	2444	2449	25	3654	3660
2	167	174	10	1384	1389	18	2597	2602	26	3805	3812
3	324	327	11	1534	1539	19	2749	2753	27	3970	3972
4	474	479	12	1686	1691	20	2899	2905	28	4110	4115
5	624	632	13	1839	1843	21	3052	3057	29	4261	4267
6	778	782	14	1989	1995	22	3202	3206	30	4419	4423
7	930	934	15	2143	2146	23	3350	3357	CC	6016	6017
8	1079	1085	16	2294	2299	24	3504	3509	WC	10416	10416

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 FULL SCAN MODE P1 15-JUL-00 15:28:53 SCAN NUMBER 42

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 2

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	16224	16224	9	1050	1054	17	2259	2265	25	3475	3479
2	16371	16374	10	1201	1204	18	2415	2419	26	3626	3632
3	142	147	11	1354	1356	19	2569	2569	27	3781	3785
4	296	298	12	1506	1508	20	2718	2721	28	3936	3936
5	444	447	13	1656	1660	21	2870	2873	29	4082	4087
6	594	598	14	1806	1811	22	3023	3026	30	4236	4238
7	746	748	15	1962	1963	23	3172	3176	CC	5832	5833
8	899	902	16	2111	2114	24	3326	3328	WC	10232	10232

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 FULL SCAN MODE P1 15-JUL-00 15:29:36 SCAN NUMBER 47

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA
CHANNEL 3

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16744	9	16792	17	16823	25	16754
2	16751	10	16832	18	16763	26	16756
3	16751	11	16845	19	16755	27	16751
4	16754	12	16813	20	16753	28	16744
5	16748	13	16809	21	16750	29	16749
6	16746	14	16818	22	16750	30	16751
7	16748	15	16848	23	16747	CC	16745
8	16749	16	16850	24	16750	WC	16793

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 FULL SCAN MODE P1 15-JUL-00 15:30:01 SCAN NUMBER 50

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA

CHANNEL 9

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16319	9	16317	17	16326	25	16318
2	16313	10	16316	18	16328	26	16316
3	16310	11	16316	19	16335	27	16318
4	16316	12	16325	20	16331	28	16320
5	16322	13	16323	21	16320	29	16318
6	16326	14	16332	22	16325	30	16323
7	16331	15	16329	23	16323	CC	16413
8	16329	16	16326	24	16324	WC	16341

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 FULL SCAN MODE P1 15-JUL-00 15:30:29 SCAN NUMBER 54

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 1 TO 16

NO		DATA	TEMP C	NO		DATA	TEMP C
1	SCAN MOTOR A1-1	18430	24.38	9	LO CHANNEL 5	23960	34.09
2	SCAN MOTOR A1-2	19723	25.66	10	LO CHANNEL 6	21731	30.02
3	FEEDHORN A1-1	20397	27.56	11	LO CHANNEL 7	22862	31.96
4	FEEDHORN A1-2	21426	29.53	12	LO CHANNEL 8	24164	34.21
5	RF MUX A1-1	22267	30.68	13	LO CHANNEL 15	24040	33.68
6	RF MUX A1-2	23384	32.83	14	PLLO #2 CH 9/14	15108	30.44
7	LO CHANNEL 3	24523	34.99	15	PLLO #1 CH 9/14	25294	36.54
8	LO CHANNEL 4	24584	34.77	16	PLLO REFERENCE	32767	51.27

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 FULL SCAN MODE P1 15-JUL-00 15:30:42 SCAN NUMBER 55

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 17 TO 32

NO	DATA	TEMP C	NO	DATA	TEMP C
17 MIXER IF CH 3	24095	33.33	25 IF AMP CH 11/14	23548	33.29
18 MIXER IF CH 4	24097	33.55	26 IF AMP CH 9	23578	33.42
19 MIXER IF CH 5	23662	33.09	27 IF AMP CH 10	23750	33.43
20 MIXER IF CH 6	22474	31.16	28 IF AMP CH 11	22292	30.91
21 MIXER IF CH 7	22663	31.76	29 DC/DC CONVERTER	23695	33.44
22 MIXER IF CH 8	23936	33.56	30 IF AMP CH 13	22281	30.88
23 MIXER IF CH 9/14	22434	30.59	31 IF AMP CH 14	22379	30.85
24 MIXER IF CH 15	23463	33.53	32 IF AMP CH 12	22191	30.82

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 FULL SCAN MODE P1 15-JUL-00 15:30:55 SCAN NUMBER 57

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 31 TO 46

NO	DATA	TEMP C	NO	DATA	TEMP C
31 IF AMP CH 14	22381	30.85	39 A1-1 WARM LOAD 4	24196	24.82
32 IF AMP CH 12	22195	30.82	40 A1-1 WARM LOAD C	24257	24.91
33 RF SHELF A1-1	22323	31.94	41 A1-2 WARM LOAD 1	24956	26.59
34 RF SHELF A1-2	23156	32.71	42 A1-2 WARM LOAD 2	25099	26.52
35 DETECTOR/PREAMP	20755	28.28	43 A1-2 WARM LOAD 3	25273	26.67
36 A1-1 WARM LOAD 1	24242	24.79	44 A1-2 WARM LOAD 4	25036	26.67
37 A1-1 WARM LOAD 2	24017	24.76	45 A1-2 WARM LOAD C	24948	26.61
38 A1-1 WARM LOAD 3	24226	24.80	THERMAL REFERENCE	25331	

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

```
AMSU  A1-33 A1.EXE;62 FULL SCAN MODE     P1 15-JUL-00 15:31:31  SCAN NUMBER     61
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                            ANALOG DATA  1 TO 18

 1 A1-1 SCANR MOTOR    216    25.90 DEG C 10 ANTENNA DRIVE             15VDC  15.07
 2 A1-2 SCANR MOTOR    217    27.06 DEG C 11 SIGNAL PROCESSING        -15VDC -15.01
 3 A1-1 RF SHELF       219    29.10 DEG C 12 ANTENNA DRIVE            -15VDC -14.97
 4 A1-2 RF SHELF       220    31.21 DEG C 13 RECEIVER AMPLIFIER         8VDC   8.00
 5 A1-1 WARM LOAD      215    25.75 DEG C 14 SIGNAL PROCESSOR          5 VDC   4.99
 6 A1-2 WARM LOAD      217    28.41 DEG C 15 ANTENNA DRIVE             5 VDC   5.02
 7 ANT A1-1 DRIVE MOTOR CURRENT   40.27 16 RECEIVER MIXER/IF          10VDC   9.91
 8 ANT A1-2 DRIVE MOTOR CURRENT   39.65 17 PHASE LOCK LOOP CH9/14  15VDC  15.02
 9 SIGNAL PROCESSING       +15VDC 15.03 18 PHASE LOCK LOOP CH9/14 -15VDC -14.97
[ 21 ] UP                 [ 22 ] DOWN

          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL      [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

```
AMSU  A1-33 A1.EXE;62 FULL SCAN MODE     P1 15-JUL-00 15:31:50  SCAN NUMBER    63
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                              ANALOG DATA 10 TO 27

10 ANTENNA DRIVE               15VDC  15.17 19 L.O. VOLTAGE      CH 8          10.00
11 SIGNAL PROCESSING          -15VDC -15.01 20 L.O. VOLTAGE      CH 7           9.98
12 ANTENNA DRIVE              -15VDC -14.90 21 L.O. VOLTAGE      CH 6          10.00
13 RECEIVER AMPLIFIER           8VDC   8.00 22 L.O. VOLTAGE      CH 3           9.99
14 SIGNAL PROCESSOR            5 VDC   4.99 23 L.O. VOLTAGE      CH 4          10.02
15 ANTENNA DRIVE               5 VDC   5.07 24 L.O. VOLTAGE      CH 5          10.00
16 RECEIVER MIXER/IF           10VDC   9.90 25 PLLO # 2 LOCK DETECT             0.08
17 PHASE LOCK LOOP CH9/14      15VDC  15.04 26 PLLO # 1 LOCK DETECT             4.40
18 PHASE LOCK LOOP CH9/14     -15VDC -14.97 27 L.O. VOLTAGE      CH15          15.00
[ 21 ] UP                     [ 22 ] DOWN

        POWER [ 4 ]  ON
                     SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL      [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

TEST DATA SHEET 16
Scanner Commands Verification (Paragraph 3.2.4.3.3.5, Step 2)

Test	Digital "B" Verification			Pass/Fail
	Command	Observed	Required	
Full Scan	1 Module Power	CONNECT	CONNECT	P
	2 Survival Heater	OFF	OFF	P
	3 Scanner A1 Power	OFF	OFF	P
	4 Scanner A2 Power	OFF	OFF	P
	5 Antenna Warm Cal Pos.	NO	NO	P
	6 Antenna Cold Cal Pos.	NO	NO	P
	7 Antenna NADIR Position	NO	NO	P
	8 Antenna Full Scan	YES	YES	P
	9 PLL Power	PLLO#1	PLLO#1	P
	10 Cold MSB	0	0	P
	11 Cold LSB	0	0	P

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer — Date 7-15-00

Customer Representative (Flight Hardware Only) — Date 7-15-00

Quality Control — Date 7-15-00

TEST DATA SHEET 17
Scanner Commands Verification (Paragraph 3.2.4.3.3.5, Step 3)

Test	Digital "B" Verification			Pass/Fail
	Command	Observed	Required	
Full Scan	1 Module Power	CONNECT	CONNECT	P
	2 Survival Heater	OFF	OFF	P
	3 Scanner A1 Power	ON	ON	P
	4 Scanner A2 Power	ON	ON	P
	5 Antenna Warm Cal Pos.	NO	NO	P
	6 Antenna Cold Cal Pos.	NO	NO	P
	7 Antenna NADIR Position	NO	NO	P
	8 Antenna Full Scan	YES	YES	P
	9 PLL Power	PLLO#1	PLLO#1	P
	10 Cold MSB	0	0	P
	11 Cold LSB	0	-0	P

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ray Herzberg 7-15-00
Test Systems Engineer Date

J. Crawford 7-15-00
Customer Representative Date
(Flight Hardware Only)

Judith Downey QA 269 7-15-00
Quality Control Date

TEST DATA SHEET 18

Scanner Positions Commands (Paragraph 3.2.4.3.3.6)

Test	Digital "B" Verification				Pass/Fail
	Step/Description		Observed	Required	
Scanner Position Commands	1-Warm Cal.		YES	YES	P
	2-Cold	MSB	0	0	P
	Cal. Pos.	LSB	1	1	P
	3-Cold	MSB	1	1	P
	Cal. Pos.	LSB	0	0	P
	4-Cold	MSB	1	1	P
	Cal. Pos.	LSB	1	1	P
	5-Cold	MSB	0	0	P
	Cal. Pos.	LSB	0	0	P
	6-NADIR		YES	YES	P
	7-Warm Cal		YES	YES	P

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control (A 265) 7-15-00 Date

TEST DATA SHEET 19
Digital-A Data Output Full Scan Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.1)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1	255	255	Pass
	0002	Sync Sequence Byte 2	255	255	
	0003	Sync Sequence Byte 3	255	255	
[II]	0004	Unit I.D. and Serial N	33	*	
[III]	0005	Digital-B Data Byte 1	2	2	
	0006	Digital-B Data Byte 2	14	**	
	0007	Digital-B Data Byte 3	0	0	
	0008	Digital-B Data Byte 4	0	0	Pass

* AMSU A1 Identification Words (data entered in decimal system)	Binary	Decimal
AMSU-A1 S/N 101	00000001	1
AMSU-A1 S/N 102	00000101	5
AMSU-A1 S/N 103	00001001	9
AMSU-A1 S/N 104	00001101	13
AMSU-A1 S/N 105	00010001	17
AMSU-A1 S/N 106	00010101	21
AMSU-A1 S/N 107	00011001	25
AMSU-A1 S/N 108	00011101	29
AMSU-A1 S/N 109	00100001	33

** Required value = 14 when PLLO #1 is active; and = 6 when PLLO #2 is active.

Circle Test: CPT Final LPT op: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-15-00
Test Systems Engineer Date

[signature] 7-17-00
Customer Representative (Flight Hardware Only) Date

[signature] 7/15/00
Quality Control Date

TEST DATA SHEET 20

Reflector Positions Section [IV] (Paragraph 3.2.4.3.4.1)

BP	A1-1 Reflector				A1-2 Reflector			
	Element (For Ref)	Measured*	Required**	Pass/Fail	Element (For Ref)	Measured*	Required**	Pass/Fail
01	0014	23	23	P	0016	16224	16225	P
02	0048	174	175		0050	16374	16377	
03	0082	326	327		0084	148	145	
04	0116	478	478		0118	299	296	
05	0150	632	630		0152	447	448	
06	0184	781	782		0186	598	600	
07	0218	933	933		0220	748	751	
08	0252	1085	1085		0254	902	903	
09	0286	1236	1237		0288	1054	1055	
10	0320	1389	1388		0322	1204	1206	
11	0354	1539	1540		0356	1356	1358	
12	0388	1691	1692		0390	1509	1510	
13	0422	1843	1843		0424	1660	1661	
14	0456	1994	1995		0458	1812	1813	
15	0490	2147	2147		0492	1963	1965	
16	0524	2299	2298		0526	2114	2116	
17	0558	2450	2450		0560	2265	2268	
18	0592	2602	2602	P	0594	2418	2420	P
19	0626	2753	2753		0628	2569	2571	
20	0660	2905	2905		0662	2721	2723	
21	0694	3056	3057		0696	2873	2875	
22	0728	3206	3208		0730	3026	3026	
23	0762	3357	3360		0764	3177	3178	
24	0796	3509	3512		0798	3328	3330	
25	0830	3660	3663		0832	3479	3481	
26	0864	3812	3815		0866	3631	3633	
27	0890	3971	3967		0900	3784	3785	
28	0932	4115	4118		0934	3935	3936	
29	0966	4267	4270		0968	4087	4088	
30	1000	4423	4422		1002	4238	4240	
CC	1034	6017	6016		1036	5833	5834	
WC	1186	10416	10415	P	1188	10232	10233	P

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.

** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

op: 0830

Circle Test: CPT Final LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer Date 7-15-00

Customer Representative (Flight Hardware Only) Date 7-17-00

Quality Control 289 Date 7-15-00

TEST DATA SHEET 21
Digital-A Data Output Radiometer Data Section [V] (Paragraph 3.2.4.3.4.1)

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
01	0018	16750	16500 ± 4000	P	0030	16326	16500 ± 4000	P
02	0052	16750			0064	16316		
03	0086	16751			0098	16315		
04	0120	16752			0132	16323		
05	0154	16747			0166	16326		
06	0188	16759			0200	16329		
07	0222	16750			0234	16335		
08	0256	16758			0268	16337		
09	0290	16790			0302	16324		
10	0324	16838			0336	16328		
11	0356	16846			0370	16324		
12	0392	16821			0404	16324		
13	0426	16810			0438	16326		
14	0460	16815			0472	16333		
15	0494	16852			0506	16333		
16	0528	16854			0540	16329		
17	0562	16815		P	0574	16330		
18	0596	16768			0608	16333		
19	0630	16754			0642	16330		
20	0664	16751			0676	16328		
21	0698	16754			0710	16327		
22	0732	16754			0744	16328		
23	0766	16751			0778	16328		
24	0800	16750			0812	16325		
25	0834	16758			0846	16325		
26	0868	16751			0880	16326		
27	0902	16753			0914	16324		
28	0936	16752			0948	16319		
29	0970	16749			0982	16322		
30	1004	16754			1016	16324		
CC	1038	16744			1050	16372		
WC	1190	16798	16500 ± 4000	Pass	1202	16343	16500 ± 4000	P

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required = 16,500 ± 4000 counts.

Circle Test: CPT Final LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-15-00
Test Systems Engineer Date

[signature] 7-17-00
Customer Representative Date
(Flight Hardware Only)

[signature] 7/15/00
Quality Control Date

TEST DATA SHEET 22 (Sheet 1 of 2)
Full Scan Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.1)

Thermistor Sensors Element	Thermistor Sensors Description	Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
1090	A1-1 Warm Load 1	24.34	25 ± 15	Pass
1092	A1-1 Warm Load 2	25.62	25 ± 15	
1094	A1-1 Warm Load 3	27.52	25 ± 15	
1096	A1-1 Warm Load 4	29.50	25 ± 15	
1098	A1-1 Warm Load Center	30.58	25 ± 15	
1100	A1-2 Warm Load 1	32.71	25 ± 15	
1102	A1-2 Warm Load 2	34.85	25 ± 15	
1104	A1-2 Warm Load 3	34.63	25 ± 15	
1106	A1-2 Warm Load 4	33.97	25 ± 15	
1108	A1-2 Warm Load Center	29.94	25 ± 15	
1110	Local Oscillator Channel 7	31.86	25 ± 15	
1112	Local Oscillator Channel 8	34.07	25 ± 15	
1114	Local Oscillator Channel 15	33.54	25 ± 15	
1116	PLL LO #2 Channels 9-14	30.37	25 ± 15	
1118	PLL LO #1 Channels 9-14	36.37	25 ± 15	Pass
1120	PLLO (Reference Oscillator)**/ Not used ***	N/A	25 ± 15	N/A
1122	Mixer I.F. Amp. Channel 3	33.19	25 ± 15	Pass
1124	Mixer I.F. Amp. Channel 4	33.41	25 ± 15	
1126	Mixer I.F. Amp. Channel 5	32.97	25 ± 15	
1128	Mixer I.F. Amp. Channel 6	31.05	25 ± 15	
1130	Mixer I.F. Amp. Channel 7	31.64	25 ± 15	
1132	Mixer I.F. Amp. Channel 8	35.41	25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14	30.48	25 ± 15	
1136	Mixer I.F. Amp. Channel 15	33.40	25 ± 15	Pass

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 22 (Sheet 2 of 2)
Full Scan Mode Temperature Sensors Section [VI (Paragraph 3.2.4.3.4.1)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14	33.15	25 ± 15	Pass
1140	I.F. Amp. Channel 9	33.27	25 ± 15	↑
1142	I.F. Amp. Channel 10	33.28	25 ± 15	
1144	I.F. Amp. Channel 11	30.81	25 ± 15	
1146	DC/DC Converter	33.31	25 ± 15	
1148	I.F. Amp. Channel 13	30.78	25 ± 15	
1150	I.F. Amp. Channel 14	30.75	25 ± 15	
1152	I.F. Amp. Channel 12	30.72	25 ± 15	
1154	RF Shelf A1-1	31.82	25 ± 15	
1156	RF Shelf A1-2	32.57	25 ± 15	
1158	Detector Preamp Assy.	28.21	25 ± 15	
1160	Scan Motor A1-1	24.77	25 ± 15	
1162	Scan Motor A1-2	24.75	25 ± 15	
1164	Feed Horn A1-1	24.78	25 ± 15	
1166	Feed Horn A1-2	24.79	25 ± 15	
1168	R.F. Mux A1-1	24.90	25 ± 15	
1170	R.F. Mux A1-2	26.65	25 ± 15	
1172	Local Oscillator Channel 3	26.48	25 ± 15	
1174	Local Oscillator Channel 4	26.62	25 ± 15	
1176	Local Oscillator Channel 5	26.63	25 ± 15	
1178	Local Oscillator Channel 6	26.58	25 ± 15	↓
1180	Temp Sensor Ref Voltage Count	25331	**	Pass

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: Final CPT LPT

op: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-15-00
Test Systems Engineer Date

[signature] 7-17-00
Customer Representative Date
(Flight Hardware Only)

[signature] 289 7/15/00
Quality Control Date

```
AMSU  A1-33 A1.EXE;62 FULL SCAN MODE    P1 15-JUL-00 15:24:53  SCAN NUMBER    12
[ 5 ] DIGITAL A DATA  ELEMENT 0000
[ 6 ] DIGITAL B DATA  ELEMENT   00
[ 7 ] ANALOG DATA     ELEMENT   00

                                      COMMANDS
[ 9 ]  MODULE POWER =        CONNECT      ANTENNA IN COLD CAL POSIT = NO   [ 15 ]
[ 10 ] SURVIVAL HEATER POWER =      OFF   ANTENNA IN NADIR POSITION = NO   [ 16 ]
[ 11 ] MODULE TOTALLY OFF =         ON    ANTENNA IN FULL SCAN MODE = YES  [ 17 ]
[ 12 ] SCANNER A1 - 1 POWER =       ON    PLL POWER =             PLLO # 1 [ 18 ]
[ 13 ] SCANNER A1 - 2 POWER =       ON    COLD CAL POSITION MSB =     ZERO [ 19 ]
[ 14 ] ANTENNA IN WARM CAL POSIT = NO     COLD CAL POSITION LSB =     ZERO [ 20 ]
          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 3
```

Para: 3.2.4.3.4.1

TDS: 19 → 22

S/O: 787920 OP: 0830

P/N: 1331720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY: [signature] 7-15-00

FULL SCAN MODE

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	SYNC SEQUENCE BYTE 1	11111111	572	SCENE DATA BP 17 CH 8	15010
2	SYNC SEQUENCE BYTE 2	11111111	574	CH 9	16330
3	SYNC SEQUENCE BYTE 3	11111111	576	CH 10	16033
4	UNIT ID AND SERIAL NO	00100001	578	CH 11	16246
5	DIGITAL B DATA BYTE 1	00000010	580	CH 12	16669
6	DIGITAL B DATA BYTE 2	00001110	582	CH 13	16433
7	DIGITAL B DATA BYTE 3	00000000	584	CH 14	16837
8	DIGITAL B DATA BYTE 4	00000000	586	CH 15	14890
10	REFLECTOR 1 POSITION 1	23	588	REFLECTOR 1 POSITION 18	2597
12	REFLECTOR 2 POSITION 1	16224	590	REFLECTOR 2 POSITION 18	2415
14	REFL 1 POS 1 2ND LOOK	23	592	REFL 1 POS 18 2ND LOOK	2602
16	REFL 2 POS 1 2ND LOOK	16224	594	REFL 2 POS 18 2ND LOOK	2418
18	SCENE DATA BP 1 CH 3	16750	596	SCENE DATA BP 18 CH 3	16768
20	CH 4	16225	598	CH 4	16249
22	CH 5	16802	600	CH 5	16821
24	CH 6	16762	602	CH 6	16766
26	CH 7	16474	604	CH 7	16479
28	CH 8	14966	606	CH 8	14976
30	CH 9	16326	608	CH 9	16333
32	CH 10	16030	610	CH 10	16034
34	CH 11	16234	612	CH 11	16248
36	CH 12	16659	614	CH 12	16665
38	CH 13	16418	616	CH 13	16438
40	CH 14	16837	618	CH 14	16835
42	CH 15	14887	620	CH 15	14890
44	REFLECTOR 1 POSITION 2	167	622	REFLECTOR 1 POSITION 19	2749
46	REFLECTOR 2 POSITION 2	16372	624	REFLECTOR 2 POSITION 19	2568
48	REFL 1 POS 2 2ND LOOK	174	626	REFL 1 POS 19 2ND LOOK	2753
50	REFL 2 POS 2 2ND LOOK	16374	628	REFL 2 POS 19 2ND LOOK	2569
52	SCENE DATA BP 2 CH 3	16750	630	SCENE DATA BP 19 CH 3	16754
54	CH 4	16227	632	CH 4	16235
56	CH 5	16805	634	CH 5	16812
58	CH 6	16755	636	CH 6	16763
60	CH 7	16468	638	CH 7	16477
62	CH 8	14961	640	CH 8	14966
64	CH 9	16316	642	CH 9	16330
66	CH 10	16023	644	CH 10	16033
68	CH 11	16235	646	CH 11	16245
70	CH 12	16661	648	CH 12	16673
72	CH 13	16436	650	CH 13	16448
74	CH 14	16856	652	CH 14	16851
76	CH 15	14886	654	CH 15	14890
78	REFLECTOR 1 POSITION 3	323	656	REFLECTOR 1 POSITION 20	2899
80	REFLECTOR 2 POSITION 3	143	658	REFLECTOR 2 POSITION 20	2718
82	REFL 1 POS 3 2ND LOOK	326	660	REFL 1 POS 20 2ND LOOK	2905
84	REFL 2 POS 3 2ND LOOK	148	662	REFL 2 POS 20 2ND LOOK	2721
86	SCENE DATA BP 3 CH 3	16751	664	SCENE DATA BP 20 CH 3	16751
88	CH 4	16227	666	CH 4	16233
90	CH 5	16810	668	CH 5	16808
92	CH 6	16750	670	CH 6	16768

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	CH 7	16466	672	CH 7	16478
96	CH 8	14961	674	CH 8	14969
98	CH 9	16315	676	CH 9	16328
100	CH 10	16025	678	CH 10	16040
102	CH 11	16234	680	CH 11	16249
104	CH 12	16663	682	CH 12	16668
106	CH 13	16407	684	CH 13	16449
108	CH 14	16817	686	CH 14	16837
110	CH 15	14885	688	CH 15	14891
112	REFLECTOR 1 POSITION 4	474	690	REFLECTOR 1 POSITION 21	3053
114	REFLECTOR 2 POSITION 4	295	692	REFLECTOR 2 POSITION 21	2868
116	REFL 1 POS 4 2ND LOOK	478	694	REFL 1 POS 21 2ND LOOK	3056
118	REFL 2 POS 4 2ND LOOK	299	696	REFL 2 POS 21 2ND LOOK	2873
120	SCENE DATA BP 4 CH 3	16752	698	SCENE DATA BP 21 CH 3	16754
122	CH 4	16225	700	CH 4	16230
124	CH 5	16811	702	CH 5	16808
126	CH 6	16758	704	CH 6	16761
128	CH 7	16472	706	CH 7	16476
130	CH 8	14967	708	CH 8	14968
132	CH 9	16323	710	CH 9	16327
134	CH 10	16027	712	CH 10	16033
136	CH 11	16240	714	CH 11	16237
138	CH 12	16663	716	CH 12	16671
140	CH 13	16444	718	CH 13	16428
142	CH 14	16831	720	CH 14	16831
144	CH 15	14889	722	CH 15	14889
146	REFLECTOR 1 POSITION 5	625	724	REFLECTOR 1 POSITION 22	3202
148	REFLECTOR 2 POSITION 5	443	726	REFLECTOR 2 POSITION 22	3023
150	REFL 1 POS 5 2ND LOOK	632	728	REFL 1 POS 22 2ND LOOK	3206
152	REFL 2 POS 5 2ND LOOK	447	730	REFL 2 POS 22 2ND LOOK	3026
154	SCENE DATA BP 5 CH 3	16747	732	SCENE DATA BP 22 CH 3	16754
156	CH 4	16232	734	CH 4	16229
158	CH 5	16810	736	CH 5	16806
160	CH 6	16763	738	CH 6	16766
162	CH 7	16474	740	CH 7	16478
164	CH 8	14965	742	CH 8	14967
166	CH 9	16326	744	CH 9	16328
168	CH 10	16036	746	CH 10	16033
170	CH 11	16244	748	CH 11	16248
172	CH 12	16664	750	CH 12	16671
174	CH 13	16421	752	CH 13	16445
176	CH 14	16837	754	CH 14	16841
178	CH 15	14889	756	CH 15	14891
180	REFLECTOR 1 POSITION 6	777	758	REFLECTOR 1 POSITION 23	3350
182	REFLECTOR 2 POSITION 6	593	760	REFLECTOR 2 POSITION 23	3173
184	REFL 1 POS 6 2ND LOOK	781	762	REFL 1 POS 23 2ND LOOK	3357
186	REFL 2 POS 6 2ND LOOK	598	764	REFL 2 POS 23 2ND LOOK	3177
188	SCENE DATA BP 6 CH 3	16759	766	SCENE DATA BP 23 CH 3	16751
190	CH 4	16232	768	CH 4	16228
192	CH 5	16807	770	CH 5	16807

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
194	CH 6	16762	772	CH 6	16762
196	CH 7	16477	774	CH 7	16476
198	CH 8	14964	776	CH 8	14965
200	CH 9	16329	778	CH 9	16328
202	CH 10	16037	780	CH 10	16034
204	CH 11	16246	782	CH 11	16247
206	CH 12	16674	784	CH 12	16663
208	CH 13	16442	786	CH 13	16432
210	CH 14	16833	788	CH 14	16842
212	CH 15	14889	790	CH 15	14887
214	REFLECTOR 1 POSITION 7	929	792	REFLECTOR 1 POSITION 24	3504
216	REFLECTOR 2 POSITION 7	745	794	REFLECTOR 2 POSITION 24	3324
218	REFL 1 POS 7 2ND LOOK	933	796	REFL 1 POS 24 2ND LOOK	3509
220	REFL 2 POS 7 2ND LOOK	748	798	REFL 2 POS 24 2ND LOOK	3328
222	SCENE DATA BP 7 CH 3	16750	800	SCENE DATA BP 24 CH 3	16750
224	CH 4	16231	802	CH 4	16228
226	CH 5	16806	804	CH 5	16808
228	CH 6	16770	806	CH 6	16761
230	CH 7	16485	808	CH 7	16476
232	CH 8	14963	810	CH 8	14968
234	CH 9	16335	812	CH 9	16325
236	CH 10	16040	814	CH 10	16037
238	CH 11	16256	816	CH 11	16248
240	CH 12	16676	818	CH 12	16675
242	CH 13	16447	820	CH 13	16434
244	CH 14	16846	822	CH 14	16840
246	CH 15	14893	824	CH 15	14889
248	REFLECTOR 1 POSITION 8	1079	826	REFLECTOR 1 POSITION 25	3654
250	REFLECTOR 2 POSITION 8	898	828	REFLECTOR 2 POSITION 25	3477
252	REFL 1 POS 8 2ND LOOK	1085	830	REFL 1 POS 25 2ND LOOK	3660
254	REFL 2 POS 8 2ND LOOK	902	832	REFL 2 POS 25 2ND LOOK	3479
256	SCENE DATA BP 8 CH 3	16758	834	SCENE DATA BP 25 CH 3	16758
258	CH 4	16230	836	CH 4	16230
260	CH 5	16810	838	CH 5	16811
262	CH 6	16770	840	CH 6	16758
264	CH 7	16485	842	CH 7	16475
266	CH 8	14968	844	CH 8	14973
268	CH 9	16337	846	CH 9	16325
270	CH 10	16040	848	CH 10	16033
272	CH 11	16250	850	CH 11	16246
274	CH 12	16673	852	CH 12	16660
276	CH 13	16433	854	CH 13	16437
278	CH 14	16855	856	CH 14	16828
280	CH 15	14890	858	CH 15	14889
282	REFLECTOR 1 POSITION 9	1232	860	REFLECTOR 1 POSITION 26	3806
284	REFLECTOR 2 POSITION 9	1049	862	REFLECTOR 2 POSITION 26	3626
286	REFL 1 POS 9 2ND LOOK	1236	864	REFL 1 POS 26 2ND LOOK	3812
288	REFL 2 POS 9 2ND LOOK	1054	866	REFL 2 POS 26 2ND LOOK	3631
290	SCENE DATA BP 9 CH 3	16790	868	SCENE DATA BP 26 CH 3	16751
292	CH 4	16266	870	CH 4	16229

FULL SCAN MODE

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
294	CH 5	16844	872	CH 5	16807
296	CH 6	16758	874	CH 6	16763
298	CH 7	16473	876	CH 7	16471
300	CH 8	14988	878	CH 8	14969
302	CH 9	16324	880	CH 9	16326
304	CH 10	16029	882	CH 10	16029
306	CH 11	16239	884	CH 11	16240
308	CH 12	16667	886	CH 12	16659
310	CH 13	16427	888	CH 13	16437
312	CH 14	16850	890	CH 14	16825
314	CH 15	14887	892	CH 15	14887
316	REFLECTOR 1 POSITION 10	1385	894	REFLECTOR 1 POSITION 27	3970
318	REFLECTOR 2 POSITION 10	1202	896	REFLECTOR 2 POSITION 27	3780
320	REFL 1 POS 10 2ND LOOK	1389	898	REFL 1 POS 27 2ND LOOK	3971
322	REFL 2 POS 10 2ND LOOK	1204	900	REFL 2 POS 27 2ND LOOK	3784
324	SCENE DATA BP 10 CH 3	16838	902	SCENE DATA BP 27 CH 3	16753
326	CH 4	16301	904	CH 4	16229
328	CH 5	16936	906	CH 5	16807
330	CH 6	16761	908	CH 6	16763
332	CH 7	16471	910	CH 7	16473
334	CH 8	15023	912	CH 8	14962
336	CH 9	16328	914	CH 9	16324
338	CH 10	16028	916	CH 10	16028
340	CH 11	16240	918	CH 11	16238
342	CH 12	16662	920	CH 12	16659
344	CH 13	16430	922	CH 13	16435
346	CH 14	16857	924	CH 14	16848
348	CH 15	14888	926	CH 15	14888
350	REFLECTOR 1 POSITION 11	1534	928	REFLECTOR 1 POSITION 28	4111
352	REFLECTOR 2 POSITION 11	1353	930	REFLECTOR 2 POSITION 28	3937
354	REFL 1 POS 11 2ND LOOK	1539	932	REFL 1 POS 28 2ND LOOK	4115
356	REFL 2 POS 11 2ND LOOK	1356	934	REFL 2 POS 28 2ND LOOK	3935
358	SCENE DATA BP 11 CH 3	16846	936	SCENE DATA BP 28 CH 3	16752
360	CH 4	16316	938	CH 4	16225
362	CH 5	16956	940	CH 5	16809
364	CH 6	16764	942	CH 6	16758
366	CH 7	16469	944	CH 7	16473
368	CH 8	15030	946	CH 8	14964
370	CH 9	16324	948	CH 9	16319
372	CH 10	16027	950	CH 10	16028
374	CH 11	16242	952	CH 11	16238
376	CH 12	16666	954	CH 12	16656
378	CH 13	16431	956	CH 13	16425
380	CH 14	16830	958	CH 14	16827
382	CH 15	14887	960	CH 15	14886
384	REFLECTOR 1 POSITION 12	1686	962	REFLECTOR 1 POSITION 29	4260
386	REFLECTOR 2 POSITION 12	1506	964	REFLECTOR 2 POSITION 29	4084
388	REFL 1 POS 12 2ND LOOK	1691	966	REFL 1 POS 29 2ND LOOK	4267
390	REFL 2 POS 12 2ND LOOK	1509	968	REFL 2 POS 29 2ND LOOK	4087
392	SCENE DATA BP 12 CH 3	16821	970	SCENE DATA BP 29 CH 3	16749

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
394	CH 4	16309	972	CH 4	16229
396	CH 5	16933	974	CH 5	16808
398	CH 6	16764	976	CH 6	16757
400	CH 7	16478	978	CH 7	16474
402	CH 8	15027	980	CH 8	14966
404	CH 9	16324	982	CH 9	16322
406	CH 10	16029	984	CH 10	16024
408	CH 11	16238	986	CH 11	16238
410	CH 12	16671	988	CH 12	16668
412	CH 13	16432	990	CH 13	16437
414	CH 14	16838	992	CH 14	16825
416	CH 15	14889	994	CH 15	14888
418	REFLECTOR 1 POSITION 13	1839	996	REFLECTOR 1 POSITION 30	4419
420	REFLECTOR 2 POSITION 13	1657	998	REFLECTOR 2 POSITION 30	4235
422	REFL 1 POS 13 2ND LOOK	1843	1000	REFL 1 POS 30 2ND LOOK	4423
424	REFL 2 POS 13 2ND LOOK	1660	1002	REFL 2 POS 30 2ND LOOK	4238
426	SCENE DATA BP 13 CH 3	16810	1004	SCENE DATA BP 30 CH 3	16754
428	CH 4	16312	1006	CH 4	16232
430	CH 5	16907	1008	CH 5	16808
432	CH 6	16766	1010	CH 6	16761
434	CH 7	16479	1012	CH 7	16473
436	CH 8	15025	1014	CH 8	14968
438	CH 9	16326	1016	CH 9	16324
440	CH 10	16035	1018	CH 10	16029
442	CH 11	16246	1020	CH 11	16240
444	CH 12	16674	1022	CH 12	16667
446	CH 13	16445	1024	CH 13	16440
448	CH 14	16830	1026	CH 14	16834
450	CH 15	14890	1028	CH 15	14889
452	REFLECTOR 1 POSITION 14	1989	1030	REFLECTOR 1 COLD CAL POS	6017
454	REFLECTOR 2 POSITION 14	1807	1032	REFLECTOR 2 COLD CAL POS	5833
456	REFL 1 POS 14 2ND LOOK	1994	1034	REFL 1 COLD CAL 2ND LOOK	6017
458	REFL 2 POS 14 2ND LOOK	1812	1036	REFL 2 COLD CAL 2ND LOOK	5833
460	SCENE DATA BP 14 CH 3	16815	1038	COLD CAL DATA 1 CH 3	16744
462	CH 4	16309	1040	CH 4	16224
464	CH 5	16886	1042	CH 5	16803
466	CH 6	16776	1044	CH 6	16809
468	CH 7	16487	1046	CH 7	16533
470	CH 8	15017	1048	CH 8	14960
472	CH 9	16333	1050	CH 9	16372
474	CH 10	16040	1052	CH 10	16076
476	CH 11	16249	1054	CH 11	16286
478	CH 12	16670	1056	CH 12	16716
480	CH 13	16441	1058	CH 13	16486
482	CH 14	16847	1060	CH 14	16889
484	CH 15	14890	1062	CH 15	14926
486	REFLECTOR 1 POSITION 15	2143	1064	COLD CAL DATA 2 CH 3	16747
488	REFLECTOR 2 POSITION 15	1961	1066	CH 4	16225
490	REFL 1 POS 15 2ND LOOK	2147	1068	CH 5	16804
492	REFL 2 POS 15 2ND LOOK	1963	1070	CH 6	16808

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
494	SCENE DATA BP 15 CH 3	16852	1072	CH 7	16535
496	CH 4	16343	1074	CH 8	14964
498	CH 5	16901	1076	CH 9	16372
500	CH 6	16768	1078	CH 10	16073
502	CH 7	16482	1080	CH 11	16284
504	CH 8	15031	1082	CH 12	16715
506	CH 9	16333	1084	CH 13	16496
508	CH 10	16035	1086	CH 14	16870
510	CH 11	16246	1088	CH 15	14927
512	CH 12	16669	1182	REFLECTOR 1 WARM CAL POS	10416
514	CH 13	16448	1184	REFLECTOR 2 WARM CAL POS	10232
516	CH 14	16853	1186	REFL 1 WARM CAL 2ND LOOK	10416
518	CH 15	14891	1188	REFL 2 WARM CAL 2ND LOOK	10232
520	REFLECTOR 1 POSITION 16	2294	1190	WARM CAL DATA 1 CH 3	16798
522	REFLECTOR 2 POSITION 16	2111	1192	CH 4	16277
524	REFL 1 POS 16 2ND LOOK	2299	1194	CH 5	16862
526	REFL 2 POS 16 2ND LOOK	2114	1196	CH 6	16782
528	SCENE DATA BP 16 CH 3	16854	1198	CH 7	16492
530	CH 4	16348	1200	CH 8	15005
532	CH 5	16902	1202	CH 9	16343
534	CH 6	16765	1204	CH 10	16056
536	CH 7	16477	1206	CH 11	16261
538	CH 8	15027	1208	CH 12	16693
540	CH 9	16329	1210	CH 13	16455
542	CH 10	16032	1212	CH 14	16862
544	CH 11	16241	1214	CH 15	14900
546	CH 12	16674	1216	WARM CAL DATA 2 CH 3	16798
548	CH 13	16455	1218	CH 4	16278
550	CH 14	16830	1220	CH 5	16857
552	CH 15	14891	1222	CH 6	16788
554	REFLECTOR 1 POSITION 17	2444	1224	CH 7	16492
556	REFLECTOR 2 POSITION 17	2261	1226	CH 8	15006
558	REFL 1 POS 17 2ND LOOK	2450	1228	CH 9	16347
560	REFL 2 POS 17 2ND LOOK	2265	1230	CH 10	16048
562	SCENE DATA BP 17 CH 3	16815	1232	CH 11	16258
564	CH 4	16317	1234	CH 12	16684
566	CH 5	16863	1236	CH 13	16447
568	CH 6	16765	1238	CH 14	16846
570	CH 7	16480	1240	CH 15	14901

TEST DATA SHEET 23

Digital-A Data Output Warm Cal Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.2)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1	255	255	PASS
	0002	Sync Sequence Byte 2	255	255	
	0003	Sync Sequence Byte 3	255	255	
[II]	0004	Unit I.D. and Serial N	33	*	
[III]	0005	Digital-B Data Byte 1	4	4	
	0006	Digital-B Data Byte 2	14	14	
	0007	Digital-B Data Byte 3	0	0	
	0008	Digital-B Data Byte 4	0	0	PASS

* AMSU A1 Identification Words (data entered in decimal system)	Binary	Decimal
AMSU-A1 S/N 101	00000001	1
AMSU-A1 S/N 102	00000101	5
AMSU-A1 S/N 103	00001001	9
AMSU-A1 S/N 104	00001101	13
AMSU-A1 S/N 105	00010001	17
AMSU-A1 S/N 106	00010101	21
AMSU-A1 S/N 107	00011001	25
AMSU-A1 S/N 108	00011101	29
AMSU-A1 S/N 109	00100001	33

Circle Test: CPT FINAL LPT   Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720   Shop Order: 787920   S/N: 109

Ken Shaw   7/15/00
Test Systems Engineer   Date

J. Sanford   7-17-00
Customer Representative (Flight Hardware Only)   Date

Judia Harvey   7/15/00
Quality Control   Date

TEST DATA SHEET 24

Reflector Position Warm Cal Mode Section [IV] and Reflector Position Nadir Mode Section [IV] (Paragraphs 3.2.4.3.4.2 and 3.2.4.3.4.4)

BP	A1-1 Reflector			
	Para No.	Position*	Required**	Pass/Fail
WC	3.2.4.3.4.2	10413	10415	P
15	3.2.4.3.4.4	2147	2147	P

WC = Warm Cal
15 = Nadir Position

BP	A1-2 Reflector			
	Para No.	Position*	Required**	Pass/Fail
WC	3.2.4.3.4.2	10226	10233	P
15	3.2.4.3.4.4	1963	1965	P

WC = Warm Cal
15 = Nadir Position

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.

** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

Circle Test: FINAL CPT LPT

Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7/15/00 Date

Customer Representative (Flight Hardware Only) 7-17-00 Date

Quality Control 7/15/00 Date

TEST DATA SHEET 25

Digital-A Data Output Warm Cal Mode Radiometer Data Section [V] (Paragraph 3.2.4.3.4.2)

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Measured*	Required**	Pass/Fail	Element (For Ref)	Measured*	Required**	Pass/Fail
01	0018	16795	16,500±4000	PASS	0030	16337	16,500±4000	PASS
02	0052	16798			0064	16333		
03	0086	16793			0098	16333		
04	0120	16793			0132	16338		
05	0154	16790			0166	16336		
06	0188	16798			0200	16337		
07	0222	16795			0234	16335		
08	0256	16795			0268	14993		
09	0290	16797			0302	16336		
10	0324	16802			0336	16339		
11	0356	16795			0370	16336		
12	0392	16797			0404	16334		
13	0426	16793			0438	16333		
14	0460	16789			0472	16337		
15	0494	16796			0506	16338		
16	0528	16795			0540	16336		
17	0562	16795			0574	16335		
18	0596	16795			0608	16336		
19	0630	16794			0642	16335		
20	0664	16797			0676	16337		
21	0698	16794			0710	16334		
22	0732	16793			0744	16336		
23	0766	16801			0778	16339		
24	0800	16797			0812	16335		
25	0834	16799			0846	16336		
26	0868	16796			0880	16335		
27	0902	16792			0914	16335		
28	0936	16794			0948	16339		
29	0970	16795			0982	16338		
30	1004	16794	16,500±4000		1016	16335	16,500±4000	
CC	1038	Ø	0		1050	Ø	0	
WC	1190	Ø	0	PASS	1202	Ø	0	PASS

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.

** ~~Required~~ = 16,500 ± 4000 counts.

Circle Test: FINAL CPT LPT

Op. 0832

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ken Shane 7-15-00
Test Systems Engineer Date

J. Goyal 7-17-00
Customer Representative Date
(Flight Hardware Only)

Judy Henney 7/15/00
Quality Control Date

TEST DATA SHEET 26 (Sheet 1 of 2)
Warm Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.2)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1	24.43	25 ± 15	PASS
1092	A1-1 Warm Load 2	25.74	25 ± 15	
1094	A1-1 Warm Load 3	27.60	25 ± 15	
1096	A1-1 Warm Load 4	29.60	25 ± 15	
1098	A1-1 Warm Load Center	30.77	25 ± 15	
1100	A1-2 Warm Load 1	32.95	25 ± 15	
1102	A1-2 Warm Load 2	35.11	25 ± 15	
1104	A1-2 Warm Load 3	34.89	25 ± 15	
1106	A1-2 Warm Load 4	34.19	25 ± 15	
1108	A1-2 Warm Load Center	30.09	25 ± 15	
1110	Local Oscillator Channel 7	32.05	25 ± 15	
1112	Local Oscillator Channel 8	34.33	25 ± 15	
1114	Local Oscillator Channel 15	33.79	25 ± 15	
1116	PLL LO #2 Channels 9-14	30.52	25 ± 15	
1118	PLL LO #1 Channels 9-14	36.68	25 ± 15	PASS
1120	PLLO (Reference Oscillator)**/ Not used ***	N/A AMSU 5 SEIT	N/A AMSU 5 SEIT	N/A AMSU 5 SEIT
1122	Mixer I.F. Amp. Channel 3	33.44	25 ± 15	PASS
1124	Mixer I.F. Amp. Channel 4	33.67	25 ± 15	
1126	Mixer I.F. Amp. Channel 5	33.20	25 ± 15	
1128	Mixer I.F. Amp. Channel 6	31.24	25 ± 15	
1130	Mixer I.F. Amp. Channel 7	31.86	25 ± 15	
1132	Mixer I.F. Amp. Channel 8	33.67	25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14	30.67	25 ± 15	
1136	Mixer I.F. Amp. Channel 15	33.63	25 ± 15	PASS

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 26 (Sheet 2 of 2)
Warm Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.2)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14	33.41	25 ± 15	PASS
1140	I.F. Amp. Channel 9	33.52	25 ± 15	
1142	I.F. Amp. Channel 10	33.54	25 ± 15	
1144	I.F. Amp. Channel 11	30.99	25 ± 15	
1146	DC/DC Converter	33.56	25 ± 15	
1148	I.F. Amp. Channel 13	30.96	25 ± 15	
1150	I.F. Amp. Channel 14	30.92	25 ± 15	
1152	I.F. Amp. Channel 12	30.90	25 ± 15	
1154	RF Shelf A1-1	32.03	25 ± 15	
1156	RF Shelf A1-2	32.80	25 ± 15	
1158	Detector Preamp Assy.	28.34	25 ± 15	
1160	Scan Motor A1-1	24.80	25 ± 15	
1162	Scan Motor A1-2	24.78	25 ± 15	
1164	Feed Horn A1-1	2482	25 ± 15	
1166	Feed Horn A1-2	24.82	25 ± 15	
1168	R.F. Mux A1-1	24.92	25 ± 15	
1170	R.F. Mux A1-2	26.62	25 ± 15	
1172	Local Oscillator Channel 3	26.56	25 ± 15	
1174	Local Oscillator Channel 4	26.70	25 ± 15	
1176	Local Oscillator Channel 5	26.70	25 ± 15	
1178	Local Oscillator Channel 6	26.64	25 ± 15	
1180	Temp Sensor Ref Voltage Count	25331	**	PASS

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: FINAL CPT LPT

Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7/15/00
Test Systems Engineer Date

[signature] 7-17-00
Customer Representative Date
(Flight Hardware Only)

[signature] (269) 7/15/00
Quality Control Date

```
AMSU  A1-33 A1.EXE;62 WARM CAL MODE      P1 15-JUL-00 15:35:37  SCAN NUMBER     91
[ 5 ] DIGITAL A DATA  ELEMENT 0000
[ 6 ] DIGITAL B DATA  ELEMENT   00
[ 7 ] ANALOG DATA     ELEMENT   00

                                        COMMANDS
[ 9 ]  MODULE POWER =        CONNECT      ANTENNA IN COLD CAL POSIT = NO   [ 15 ]
[ 10 ] SURVIVAL HEATER POWER =     OFF    ANTENNA IN NADIR POSITION = NO   [ 16 ]
[ 11 ] MODULE TOTALLY OFF =        ON     ANTENNA IN FULL SCAN MODE = NO   [ 17 ]
[ 12 ] SCANNER A1 - 1 POWER =      ON     PLL POWER =            PLLO # 1  [ 18 ]
[ 13 ] SCANNER A1 - 2 POWER =      ON     COLD CAL POSITION MSB =     ZERO [ 19 ]
[ 14 ] ANTENNA IN WARM CAL POSIT = YES    COLD CAL POSITION LSB =     ZERO [ 20 ]
         POWER [ 4 ]  ON
                      SCREEN ONLY [ 2 ]   PRINT  [ 3 ] FULL        [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 3
```

3.2.43.4.2 and 3.2.4.3.4.4

S/O: 787920 OP: 0830

TDS 23 to 26

TEST ENG: Kushay DATE: 7/15/00

P/N: 1331720-3-TST SN: 109

FINAL CPT

QUALITY: Judith Hervey 7/15/00

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	SYNC SEQUENCE BYTE 1	11111111	572	WARM CAL SAMPLE 17 CH 8	14987
2	SYNC SEQUENCE BYTE 2	11111111	574	CH 9	16335
3	SYNC SEQUENCE BYTE 3	11111111	576	CH 10	16039
4	UNIT ID AND SERIAL NO	00100001	578	CH 11	16239
5	DIGITAL B DATA BYTE 1	00000100	580	CH 12	16664
6	DIGITAL B DATA BYTE 2	00001110	582	CH 13	16441
7	DIGITAL B DATA BYTE 3	00000000	584	CH 14	16826
8	DIGITAL B DATA BYTE 4	00000000	586	CH 15	14890
10	REFLECTOR 1 POSITION 1	10413	588	REFLECTOR 1 POSITION 18	10413
12	REFLECTOR 2 POSITION 1	10226	590	REFLECTOR 2 POSITION 18	10226
14	REFL 1 POS 1 2ND LOOK	10413	592	REFL 1 POS 18 2ND LOOK	10413
16	REFL 2 POS 1 2ND LOOK	10226	594	REFL 2 POS 18 2ND LOOK	10226
18	WARM CAL SAMPLE 1 CH 3	16795	596	WARM CAL SAMPLE 18 CH 3	16795
20	CH 4	16268	598	CH 4	16263
22	CH 5	16854	600	CH 5	16852
24	CH 6	16779	602	CH 6	16776
26	CH 7	16486	604	CH 7	16487
28	CH 8	14990	606	CH 8	14993
30	CH 9	16337	608	CH 9	16336
32	CH 10	16040	610	CH 10	16043
34	CH 11	16241	612	CH 11	16241
36	CH 12	16672	614	CH 12	16673
38	CH 13	16443	616	CH 13	16435
40	CH 14	16834	618	CH 14	16840
42	CH 15	14890	620	CH 15	14891
44	REFLECTOR 1 POSITION 2	10413	622	REFLECTOR 1 POSITION 19	10413
46	REFLECTOR 2 POSITION 2	10226	624	REFLECTOR 2 POSITION 19	10226
48	REFL 1 POS 2 2ND LOOK	10413	626	REFL 1 POS 19 2ND LOOK	10413
50	REFL 2 POS 2 2ND LOOK	10226	628	REFL 2 POS 19 2ND LOOK	10226
52	WARM CAL SAMPLE 2 CH 3	16798	630	WARM CAL SAMPLE 19 CH 3	16794
54	CH 4	16264	632	CH 4	16266
56	CH 5	16853	634	CH 5	16856
58	CH 6	16775	636	CH 6	16779
60	CH 7	16486	638	CH 7	16486
62	CH 8	14992	640	CH 8	14996
64	CH 9	16333	642	CH 9	16335
66	CH 10	16039	644	CH 10	16040
68	CH 11	16239	646	CH 11	16247
70	CH 12	16679	648	CH 12	16670
72	CH 13	16428	650	CH 13	16447
74	CH 14	16825	652	CH 14	16847
76	CH 15	14891	654	CH 15	14890
78	REFLECTOR 1 POSITION 3	10413	656	REFLECTOR 1 POSITION 20	10413
80	REFLECTOR 2 POSITION 3	10226	658	REFLECTOR 2 POSITION 20	10226
82	REFL 1 POS 3 2ND LOOK	10413	660	REFL 1 POS 20 2ND LOOK	10413
84	REFL 2 POS 3 2ND LOOK	10226	662	REFL 2 POS 20 2ND LOOK	10226
86	WARM CAL SAMPLE 3 CH 3	16793	664	WARM CAL SAMPLE 20 CH 3	16797
88	CH 4	16268	666	CH 4	16265
90	CH 5	16854	668	CH 5	16850
92	CH 6	16774	670	CH 6	16776

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	CH 7	16485	672	CH 7	16484
96	CH 8	14992	674	CH 8	14990
98	CH 9	16333	676	CH 9	16337
100	CH 10	16042	678	CH 10	16041
102	CH 11	16241	680	CH 11	16242
104	CH 12	16670	682	CH 12	16670
106	CH 13	16433	684	CH 13	16446
108	CH 14	16848	686	CH 14	16834
110	CH 15	14891	688	CH 15	14891
112	REFLECTOR 1 POSITION 4	10413	690	REFLECTOR 1 POSITION 21	10413
114	REFLECTOR 2 POSITION 4	10226	692	REFLECTOR 2 POSITION 21	10226
116	REFL 1 POS 4 2ND LOOK	10413	694	REFL 1 POS 21 2ND LOOK	10413
118	REFL 2 POS 4 2ND LOOK	10226	696	REFL 2 POS 21 2ND LOOK	10226
120	WARM CAL SAMPLE 4 CH 3	16793	698	WARM CAL SAMPLE 21 CH 3	16794
122	CH 4	16265	700	CH 4	16268
124	CH 5	16852	702	CH 5	16850
126	CH 6	16778	704	CH 6	16778
128	CH 7	16486	706	CH 7	16486
130	CH 8	14995	708	CH 8	14992
132	CH 9	16338	710	CH 9	16334
134	CH 10	16043	712	CH 10	16036
136	CH 11	16245	714	CH 11	16239
138	CH 12	16666	716	CH 12	16668
140	CH 13	16436	718	CH 13	16451
142	CH 14	16832	720	CH 14	16837
144	CH 15	14891	722	CH 15	14890
146	REFLECTOR 1 POSITION 5	10413	724	REFLECTOR 1 POSITION 22	10413
148	REFLECTOR 2 POSITION 5	10226	726	REFLECTOR 2 POSITION 22	10226
150	REFL 1 POS 5 2ND LOOK	10413	728	REFL 1 POS 22 2ND LOOK	10413
152	REFL 2 POS 5 2ND LOOK	10226	730	REFL 2 POS 22 2ND LOOK	10226
154	WARM CAL SAMPLE 5 CH 3	16790	732	WARM CAL SAMPLE 22 CH 3	16793
156	CH 4	16266	734	CH 4	16268
158	CH 5	16856	736	CH 5	16853
160	CH 6	16778	738	CH 6	16774
162	CH 7	16487	740	CH 7	16485
164	CH 8	14994	742	CH 8	14993
166	CH 9	16336	744	CH 9	16336
168	CH 10	16043	746	CH 10	16038
170	CH 11	16239	748	CH 11	16241
172	CH 12	16661	750	CH 12	16665
174	CH 13	16431	752	CH 13	16436
176	CH 14	16849	754	CH 14	16825
178	CH 15	14891	756	CH 15	14892
180	REFLECTOR 1 POSITION 6	10413	758	REFLECTOR 1 POSITION 23	10413
182	REFLECTOR 2 POSITION 6	10226	760	REFLECTOR 2 POSITION 23	10226
184	REFL 1 POS 6 2ND LOOK	10413	762	REFL 1 POS 23 2ND LOOK	10413
186	REFL 2 POS 6 2ND LOOK	10226	764	REFL 2 POS 23 2ND LOOK	10226
188	WARM CAL SAMPLE 6 CH 3	16798	766	WARM CAL SAMPLE 23 CH 3	16801
190	CH 4	16266	768	CH 4	16268
192	CH 5	16853	770	CH 5	16851

WARM CAL MODE

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
194	CH 6	16775	772	CH 6	16773
196	CH 7	16487	774	CH 7	16486
198	CH 8	14990	776	CH 8	14993
200	CH 9	16337	778	CH 9	16339
202	CH 10	16039	780	CH 10	16042
204	CH 11	16241	782	CH 11	16246
206	CH 12	16671	784	CH 12	16663
208	CH 13	16435	786	CH 13	16444
210	CH 14	16828	788	CH 14	16834
212	CH 15	14890	790	CH 15	14892
214	REFLECTOR 1 POSITION 7	10413	792	REFLECTOR 1 POSITION 24	10413
216	REFLECTOR 2 POSITION 7	10226	794	REFLECTOR 2 POSITION 24	10226
218	REFL 1 POS 7 2ND LOOK	10413	796	REFL 1 POS 24 2ND LOOK	10413
220	REFL 2 POS 7 2ND LOOK	10226	798	REFL 2 POS 24 2ND LOOK	10226
222	WARM CAL SAMPLE 7 CH 3	16795	800	WARM CAL SAMPLE 24 CH 3	16797
224	CH 4	16264	802	CH 4	16263
226	CH 5	16855	804	CH 5	16854
228	CH 6	16778	806	CH 6	16773
230	CH 7	16486	808	CH 7	16485
232	CH 8	14995	810	CH 8	14993
234	CH 9	16335	812	CH 9	16335
236	CH 10	16046	814	CH 10	16041
238	CH 11	16246	816	CH 11	16248
240	CH 12	16667	818	CH 12	16669
242	CH 13	16446	820	CH 13	16436
244	CH 14	16837	822	CH 14	16816
246	CH 15	14890	824	CH 15	14891
248	REFLECTOR 1 POSITION 8	10413	826	REFLECTOR 1 POSITION 25	10413
250	REFLECTOR 2 POSITION 8	10226	828	REFLECTOR 2 POSITION 25	10226
252	REFL 1 POS 8 2ND LOOK	10413	830	REFL 1 POS 25 2ND LOOK	10413
254	REFL 2 POS 8 2ND LOOK	10226	832	REFL 2 POS 25 2ND LOOK	10226
256	WARM CAL SAMPLE 8 CH 3	16795	834	WARM CAL SAMPLE 25 CH 3	16799
258	CH 4	16267	836	CH 4	16268
260	CH 5	16853	838	CH 5	16852
262	CH 6	16777	840	CH 6	16775
264	CH 7	16488	842	CH 7	16486
266	CH 8	14993	844	CH 8	14994
268	CH 9	16335	846	CH 9	16336
270	CH 10	16041	848	CH 10	16044
272	CH 11	16244	850	CH 11	16243
274	CH 12	16668	852	CH 12	16674
276	CH 13	16441	854	CH 13	16444
278	CH 14	16823	856	CH 14	16833
280	CH 15	14891	858	CH 15	14891
282	REFLECTOR 1 POSITION 9	10413	860	REFLECTOR 1 POSITION 26	10413
284	REFLECTOR 2 POSITION 9	10226	862	REFLECTOR 2 POSITION 26	10226
286	REFL 1 POS 9 2ND LOOK	10413	864	REFL 1 POS 26 2ND LOOK	10413
288	REFL 2 POS 9 2ND LOOK	10226	866	REFL 2 POS 26 2ND LOOK	10226
290	WARM CAL SAMPLE 9 CH 3	16797	868	WARM CAL SAMPLE 26 CH 3	16796
292	CH 4	16269	870	CH 4	16268

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
294	CH 5	16854	872	CH 5	16849
296	CH 6	16775	874	CH 6	16778
298	CH 7	16485	876	CH 7	16487
300	CH 8	14993	878	CH 8	14988
302	CH 9	16336	880	CH 9	16335
304	CH 10	16041	882	CH 10	16044
306	CH 11	16244	884	CH 11	16245
308	CH 12	16671	886	CH 12	16660
310	CH 13	16443	888	CH 13	16438
312	CH 14	16829	890	CH 14	16842
314	CH 15	14890	892	CH 15	14890
316	REFLECTOR 1 POSITION 10	10413	894	REFLECTOR 1 POSITION 27	10413
318	REFLECTOR 2 POSITION 10	10226	896	REFLECTOR 2 POSITION 27	10226
320	REFL 1 POS 10 2ND LOOK	10413	898	REFL 1 POS 27 2ND LOOK	10413
322	REFL 2 POS 10 2ND LOOK	10226	900	REFL 2 POS 27 2ND LOOK	10226
324	WARM CAL SAMPLE 10 CH 3	16802	902	WARM CAL SAMPLE 27 CH 3	16792
326	CH 4	16265	904	CH 4	16263
328	CH 5	16847	906	CH 5	16849
330	CH 6	16773	908	CH 6	16776
332	CH 7	16486	910	CH 7	16485
334	CH 8	14991	912	CH 8	14994
336	CH 9	16339	914	CH 9	16335
338	CH 10	16045	916	CH 10	16044
340	CH 11	16240	918	CH 11	16244
342	CH 12	16674	920	CH 12	16667
344	CH 13	16427	922	CH 13	16426
346	CH 14	16838	924	CH 14	16830
348	CH 15	14890	926	CH 15	14889
350	REFLECTOR 1 POSITION 11	10413	928	REFLECTOR 1 POSITION 28	10413
352	REFLECTOR 2 POSITION 11	10226	930	REFLECTOR 2 POSITION 28	10226
354	REFL 1 POS 11 2ND LOOK	10413	932	REFL 1 POS 28 2ND LOOK	10413
356	REFL 2 POS 11 2ND LOOK	10226	934	REFL 2 POS 28 2ND LOOK	10226
358	WARM CAL SAMPLE 11 CH 3	16795	936	WARM CAL SAMPLE 28 CH 3	16794
360	CH 4	16265	938	CH 4	16267
362	CH 5	16851	940	CH 5	16851
364	CH 6	16781	942	CH 6	16771
366	CH 7	16483	944	CH 7	16484
368	CH 8	14992	946	CH 8	14989
370	CH 9	16336	948	CH 9	16339
372	CH 10	16040	950	CH 10	16040
374	CH 11	16242	952	CH 11	16243
376	CH 12	16668	954	CH 12	16667
378	CH 13	16439	956	CH 13	16434
380	CH 14	16838	958	CH 14	16823
382	CH 15	14889	960	CH 15	14890
384	REFLECTOR 1 POSITION 12	10413	962	REFLECTOR 1 POSITION 29	10413
386	REFLECTOR 2 POSITION 12	10226	964	REFLECTOR 2 POSITION 29	10226
388	REFL 1 POS 12 2ND LOOK	10413	966	REFL 1 POS 29 2ND LOOK	10413
390	REFL 2 POS 12 2ND LOOK	10226	968	REFL 2 POS 29 2ND LOOK	10226
392	WARM CAL SAMPLE 12 CH 3	16797	970	WARM CAL SAMPLE 29 CH 3	16795

WARM CAL MODE

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
394	CH 4	16266	972	CH 4	16267
396	CH 5	16856	974	CH 5	16853
398	CH 6	16774	976	CH 6	16776
400	CH 7	16485	978	CH 7	16484
402	CH 8	14993	980	CH 8	14992
404	CH 9	16334	982	CH 9	16338
406	CH 10	16047	984	CH 10	16040
408	CH 11	16244	986	CH 11	16245
410	CH 12	16667	988	CH 12	16673
412	CH 13	16434	990	CH 13	16442
414	CH 14	16833	992	CH 14	16831
416	CH 15	14891	994	CH 15	14891
418	REFLECTOR 1 POSITION 13	10413	996	REFLECTOR 1 POSITION 30	10413
420	REFLECTOR 2 POSITION 13	10226	998	REFLECTOR 2 POSITION 30	10226
422	REFL 1 POS 13 2ND LOOK	10413	1000	REFL 1 POS 30 2ND LOOK	10413
424	REFL 2 POS 13 2ND LOOK	10226	1002	REFL 2 POS 30 2ND LOOK	10226
426	WARM CAL SAMPLE 13 CH 3	16793	1004	WARM CAL SAMPLE 30 CH 3	16794
428	CH 4	16269	1006	CH 4	16265
430	CH 5	16850	1008	CH 5	16853
432	CH 6	16775	1010	CH 6	16774
434	CH 7	16485	1012	CH 7	16486
436	CH 8	14992	1014	CH 8	14991
438	CH 9	16333	1016	CH 9	16335
440	CH 10	16038	1018	CH 10	16042
442	CH 11	16242	1020	CH 11	16243
444	CH 12	16667	1022	CH 12	16665
446	CH 13	16447	1024	CH 13	16439
448	CH 14	16836	1026	CH 14	16823
450	CH 15	14890	1028	CH 15	14890
452	REFLECTOR 1 POSITION 14	10413	1030	REFLECTOR 1 COLD CAL POS	0E
454	REFLECTOR 2 POSITION 14	10226	1032	REFLECTOR 2 COLD CAL POS	0E
456	REFL 1 POS 14 2ND LOOK	10413	1034	REFL 1 COLD CAL 2ND LOOK	0E
458	REFL 2 POS 14 2ND LOOK	10226	1036	REFL 2 COLD CAL 2ND LOOK	0E
460	WARM CAL SAMPLE 14 CH 3	16789	1038	COLD CAL DATA 1 CH 3	0
462	CH 4	16270	1040	CH 4	0
464	CH 5	16850	1042	CH 5	0
466	CH 6	16776	1044	CH 6	0
468	CH 7	16482	1046	CH 7	0
470	CH 8	14994	1048	CH 8	0
472	CH 9	16337	1050	CH 9	0
474	CH 10	16043	1052	CH 10	0
476	CH 11	16240	1054	CH 11	0
478	CH 12	16673	1056	CH 12	0
480	CH 13	16432	1058	CH 13	0
482	CH 14	16844	1060	CH 14	0
484	CH 15	14892	1062	CH 15	0
486	REFLECTOR 1 POSITION 15	10413	1064	COLD CAL DATA 2 CH 3	0
488	REFLECTOR 2 POSITION 15	10226	1066	CH 4	0
490	REFL 1 POS 15 2ND LOOK	10413	1068	CH 5	0
492	REFL 2 POS 15 2ND LOOK	10226	1070	CH 6	0

WARM CAL MODE

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
494	WARM CAL SAMPLE 15 CH 3	16796	1072	CH 7	0
496	CH 4	16265	1074	CH 8	0
498	CH 5	16853	1076	CH 9	0
500	CH 6	16774	1078	CH 10	0
502	CH 7	16484	1080	CH 11	0
504	CH 8	14992	1082	CH 12	0
506	CH 9	16338	1084	CH 13	0
508	CH 10	16047	1086	CH 14	0
510	CH 11	16245	1088	CH 15	0
512	CH 12	16675	1182	REFLECTOR 1 WARM CAL POS	0E
514	CH 13	16437	1184	REFLECTOR 2 WARM CAL POS	0E
516	CH 14	16819	1186	REFL 1 WARM CAL 2ND LOOK	0E
518	CH 15	14890	1188	REFL 2 WARM CAL 2ND LOOK	0E
520	REFLECTOR 1 POSITION 16	10413	1190	WARM CAL DATA 1 CH 3	0
522	REFLECTOR 2 POSITION 16	10226	1192	CH 4	0
524	REFL 1 POS 16 2ND LOOK	10413	1194	CH 5	0
526	REFL 2 POS 16 2ND LOOK	10226	1196	CH 6	0
528	WARM CAL SAMPLE 16 CH 3	16795	1198	CH 7	0
530	CH 4	16265	1200	CH 8	0
532	CH 5	16850	1202	CH 9	0
534	CH 6	16777	1204	CH 10	0
536	CH 7	16485	1206	CH 11	0
538	CH 8	14990	1208	CH 12	0
540	CH 9	16336	1210	CH 13	0
542	CH 10	16041	1212	CH 14	0
544	CH 11	16244	1214	CH 15	0
546	CH 12	16674	1216	WARM CAL DATA 2 CH 3	0
548	CH 13	16428	1218	CH 4	0
550	CH 14	16835	1220	CH 5	0
552	CH 15	14891	1222	CH 6	0
554	REFLECTOR 1 POSITION 17	10413	1224	CH 7	0
556	REFLECTOR 2 POSITION 17	10226	1226	CH 8	0
558	REFL 1 POS 17 2ND LOOK	10413	1228	CH 9	0
560	REFL 2 POS 17 2ND LOOK	10226	1230	CH 10	0
562	WARM CAL SAMPLE 17 CH 3	16795	1232	CH 11	0
564	CH 4	16269	1234	CH 12	0
566	CH 5	16851	1236	CH 13	0
568	CH 6	16774	1238	CH 14	0
570	CH 7	16486	1240	CH 15	0

WARM CAL MODE

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
1090	SCAN MOTOR A1-1	18458	24.43
1092	SCAN MOTOR A1-2	19763	25.74
1094	FEEDHORN A1-1	20417	27.60
1096	FEEDHORN A1-2	21461	29.60
1098	RF MUX A1-1	22313	30.77
1100	RF MUX A1-2	23443	32.95
1102	LOCAL OSCILLATOR CHANNEL 3	24586	35.11
1104	LOCAL OSCILLATOR CHANNEL 4	24646	34.89
1106	LOCAL OSCILLATOR CHANNEL 5	24011	34.19
1108	LOCAL OSCILLATOR CHANNEL 6	21767	30.09
1110	LOCAL OSCILLATOR CHANNEL 7	22908	32.05
1112	LOCAL OSCILLATOR CHANNEL 8	24226	34.33
1114	LOCAL OSCILLATOR CHANNEL 15	24096	33.79
1116	PLL LO #2 CHANNELS 9 THROUGH 14	15146	30.52
1118	PLL LO #1 CHANNELS 9 THROUGH 14	25362	36.68
1120	SPARE (NOT USED)	32767	51.27
1122	MIXER/IF AMPLIFIER CHANNEL 3	24152	33.44
1124	MIXER/IF AMPLIFIER CHANNEL 4	24157	33.67
1126	MIXER/IF AMPLIFIER CHANNEL 5	23716	33.20
1128	MIXER/IF AMPLIFIER CHANNEL 6	22518	31.24
1130	MIXER/IF AMPLIFIER CHANNEL 7	22713	31.86
1132	MIXER/IF AMPLIFIER CHANNEL 8	23996	33.67
1134	MIXER/IF AMPLIFIER CH 9 THRU 14	22479	30.67
1136	MIXER/IF AMPLIFIER CHANNEL 15	23514	33.63
1138	IF AMPLIFIER CHANNEL 11 THRU 14	23606	33.41
1140	IF AMPLIFIER CHANNEL 9	23634	33.52
1142	IF AMPLIFIER CHANNEL 10	23807	33.54
1144	IF AMPLIFIER CHANNEL 11	22333	30.99
1146	DC/DC CONVERTER	23756	33.56
1148	IF AMPLIFIER CHANNEL 13	22324	30.96
1150	IF AMPLIFIER CHANNEL 14	22418	30.92
1152	IF AMPLIFIER CHANNEL 12	22234	30.90
1154	RF SHELF A1-1	22370	32.03
1156	RF SHELF A1-2	23205	32.80
1158	DETECTOR/PREAMPLIFIER ASSEMBLY	20782	28.34
1160	A1-1 WARM LOAD 1	24248	24.80
1162	A1-1 WARM LOAD 2	24025	24.78
1164	A1-1 WARM LOAD 3	24234	24.82
1166	A1-1 WARM LOAD 4	24197	24.82
1168	A1-1 WARM LOAD CENTER	24266	24.92
1170	A1-2 WARM LOAD 1	24973	26.62
1172	A1-2 WARM LOAD 2	25119	26.56
1174	A1-2 WARM LOAD 3	25286	26.70
1176	A1-2 WARM LOAD 4	25051	26.70
1178	A1-2 WARM LOAD CENTER	24967	26.64
1180	TEMP SENSOR REFERENCE VOLTAGE	25331	

WARM CAL MODE

DESCRIPTION	STATUS	STATUS	STATUS
SCANNER A1-1 POWER	ON	ON	ON
SCANNER A1-2 POWER	ON	ON	ON
PLL POWER	PLLO # 1	PLLO # 1	PLLO # 1
ANTENNA IN WARM CAL POSITION MODE	YES	YES	YES
ANTENNA IN COLD CAL POSITION MODE	NO	NO	NO
ANTENNA IN NADIR POSITION MODE	NO	NO	NO
ANTENNA IN FULL SCAN MODE	NO	NO	NO
SURVIVAL HEATER POWER	OFF	OFF	OFF
MODULE POWER	CONNECT	CONNECT	CONNECT
COLD CAL POSITION MSB	ZERO	ZERO	ZERO
COLD CAL POSITION LSB	ZERO	ZERO	ZERO

ANALOG DATA

DESCRIPTION	VALUE	DEG C	VALUE	DEG C	VALUE	DEG C
A1-1 SCANNER MOTOR TEMPERATURE	216	25.1	216	25.1	216	25.1
A1-2 SCANNER MOTOR TEMPERATURE	217	26.2	217	26.2	217	26.2
A1-1 RF SHELF TEMPERATURE	218	27.5	219	28.8	219	28.8
A1-2 RF SHELF TEMPERATURE	220	30.1	220	30.1	220	30.1
A1-1 WARM LOAD TEMPERATURE	215	24.7	215	24.7	215	24.7
A1-2 WARM LOAD TEMPERATURE	217	27.7	217	27.7	218	29.0

DESCRIPTION	VALUE	AMPS/ VOLTS	VALUE	AMPS/ VOLTS	VALUE	AMPS/ VOLTS
A1-1 ANTENNA DRIVE MOTOR CURRENT (AVRG)	55	25.63	48	22.37	42	19.57
A1-2 ANTENNA DRIVE MOTOR CURRENT (AVRG)	54	25.16	47	21.90	40	18.64
SIGNAL PROCESSING +15 VDC	170	14.99	170	14.99	170	14.99
ANTENNA DRIVE +15 VDC	170	14.99	170	14.99	169	14.90
SIGNAL PROCESSING -15 VDC	147	-15.05	147	-15.05	147	-15.05
ANTENNA DRIVE -15 VDC	147	-15.00	147	-15.00	147	-15.00
RECEIVER AMPLIFIER +8 VDC	156	8.00	156	8.00	156	8.00
SIGNAL PROCESSOR +5 VDC	144	4.99	144	4.99	144	4.99
ANTENNA DRIVE +5 VDC	145	4.99	145	4.99	145	4.99
RECEIVER MIXER/IF +10 VDC	168	9.89	168	9.89	168	9.89
PHASE LOCK LOOP (CHANNEL 9/14) +15 VDC	168	14.99	168	14.99	168	14.99
PHASE LOCK LOOP (CHANNEL 9/14) -15 VDC	143	-15.00	143	-15.00	143	-15.00
L.O. VOLTAGE (CHANNEL 8) VDC	171	9.99	171	9.99	171	9.99
L.O. VOLTAGE (CHANNEL 7) VDC	170	9.94	170	9.94	170	9.94
L.O. VOLTAGE (CHANNEL 6) VDC	171	9.97	171	9.97	171	9.97
L.O. VOLTAGE (CHANNEL 3) VDC	171	9.98	171	9.98	171	9.98
L.O. VOLTAGE (CHANNEL 4) VDC	171	9.99	171	9.99	171	9.99
L.O. VOLTAGE (CHANNEL 5) VDC	170	9.95	170	9.95	170	9.95
PLLO # 2 LOCK DETECT	4	0.08	4	0.08	4	0.08
PLLO # 1 LOCK DETECT	219	4.38	219	4.38	219	4.38
L.O. VOLTAGE (CHANNEL 15) VDC	169	14.90	169	14.90	169	14.90

WARM CAL MODE

PRT TEMPERATURES	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
VARIABLE TARGET	615	42.00	601	14.00
	616	43.00	602	15.00
	617	44.00	603	16.00
	618	45.00	604	17.00
	619	46.00	605	18.00
	620	47.00	606	19.00
	621	48.00	607	20.00
FIXED TARGET	622	49.00	608	21.00
	623	50.00	609	22.00
	624	51.00	610	23.00
	625	52.00	611	24.00
	626	53.00	612	25.00
	627	67.00	613	69.00
	628	68.00	614	70.00
BASEPLATE	629	71.00	630	72.00
	631	26.00	632	27.00

THERMOCOUPLE TEMPERATURES	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
FIXED TARGET SHROUD	558	5.00	537	34.00
	559	6.00	538	35.00
VARIABLE TARGET SHROUD	550	7.00	524	36.00
	551	8.00	525	37.00
FIXED TARGET N2	506	57.00	502	30.00
	507	58.00	503	31.00
VARIABLE TARGET N2	516	59.00	511	32.00
	517	60.00	512	33.00
HEATER N2	514	1.00	509	38.00
	515	2.00	510	39.00
FIXED TARGET FLOW METER	508	63.00	504	61.00
VARIABLE TARGET FLOW METER	518	64.00	513	62.00
BASEPLATE HEATER N2	519	3.00	520	4.00
BASEPLATE N2	521	9.00	522	10.00
BASEPLATE FLOW METER	523	65.00		
ADJUNCT RADIATORS	575	73.00	577	74.00
	579	75.00	581	76.00

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[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA

CHANNEL 3

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16795	9	16799	17	16795	25	16790
2	16795	10	16796	18	16791	26	16798
3	16789	11	16803	19	16795	27	16798
4	16797	12	16800	20	16793	28	16794
5	16793	13	16793	21	16796	29	16793
6	16798	14	16797	22	16796	30	16799
7	16795	15	16798	23	16793	CC	0
8	16798	16	16798	24	16791	WC	0

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 WARM CAL MODE P1 15-JUL-00 15:39:05 SCAN NUMBER 117

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA
CHANNEL 9

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16331	9	16333	17	16333	25	16334
2	16333	10	16336	18	16336	26	16335
3	16334	11	16335	19	16336	27	16335
4	16335	12	16334	20	16333	28	16334
5	16333	13	16332	21	16334	29	16336
6	16332	14	16336	22	16334	30	16335
7	16332	15	16335	23	16331	CC	0
8	16335	16	16332	24	16336	WC	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 WARM CAL MODE P1 15-JUL-00 15:39:38 SCAN NUMBER 121

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 1

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	10413	10413	9	10413	10413	17	10413	10413	25	10413	10413
2	10413	10413	10	10413	10413	18	10413	10413	26	10413	10413
3	10413	10413	11	10413	10413	19	10413	10413	27	10413	10413
4	10413	10413	12	10413	10413	20	10413	10413	28	10413	10413
5	10413	10413	13	10413	10413	21	10413	10413	29	10413	10413
6	10413	10413	14	10413	10413	22	10413	10413	30	10413	10413
7	10413	10413	15	10413	10413	23	10413	10413	CC	0	0
8	10413	10413	16	10413	10413	24	10413	10413	WC	0	0

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 WARM CAL MODE P1 15-JUL-00 15:39:56 SCAN NUMBER 123

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 2

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	10226	10226	9	10226	10226	17	10226	10226	25	10226	10226
2	10226	10226	10	10226	10226	18	10226	10226	26	10226	10226
3	10226	10226	11	10226	10226	19	10226	10226	27	10226	10226
4	10226	10226	12	10226	10226	20	10226	10226	28	10226	10226
5	10226	10226	13	10226	10226	21	10226	10226	29	10226	10226
6	10226	10226	14	10226	10226	22	10226	10226	30	10226	10226
7	10226	10226	15	10226	10226	23	10226	10226	CC	0	0
8	10226	10226	16	10226	10226	24	10226	10226	WC	0	0

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 WARM CAL MODE P1 15-JUL-00 15:40:15 SCAN NUMBER 126

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 1 TO 16

NO		DATA	TEMP C	NO		DATA	TEMP C
1	SCAN MOTOR A1-1	18432	24.38	9	LO CHANNEL 5	24060	34.28
2	SCAN MOTOR A1-2	19745	25.70	10	LO CHANNEL 6	21795	30.15
3	FEEDHORN A1-1	20479	27.72	11	LO CHANNEL 7	22949	32.13
4	FEEDHORN A1-2	21541	29.75	12	LO CHANNEL 8	24275	34.42
5	RF MUX A1-1	22356	30.85	13	LO CHANNEL 15	24142	33.88
6	RF MUX A1-2	23495	33.05	14	PLLO #2 CH 9/14	15183	30.59
7	LO CHANNEL 3	24626	35.19	15	PLLO #1 CH 9/14	25414	36.78
8	LO CHANNEL 4	24699	35.00	16	PLLO REFERENCE	32767	51.27

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 WARM CAL MODE P1 15-JUL-00 15:40:25 SCAN NUMBER 127

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 17 TO 32

NO	DATA	TEMP C	NO	DATA	TEMP C
17 MIXER IF CH 3	24203	33.54	25 IF AMP CH 11/14	23654	33.50
18 MIXER IF CH 4	24209	33.77	26 IF AMP CH 9	23682	33.62
19 MIXER IF CH 5	23768	33.30	27 IF AMP CH 10	23856	33.64
20 MIXER IF CH 6	22558	31.32	28 IF AMP CH 11	22373	31.07
21 MIXER IF CH 7	22757	31.95	29 DC/DC CONVERTER	23796	33.64
22 MIXER IF CH 8	24048	33.77	30 IF AMP CH 13	22363	31.04
23 MIXER IF CH 9/14	22518	30.75	31 IF AMP CH 14	22458	31.00
24 MIXER IF CH 15	23562	33.72	32 IF AMP CH 12	22273	30.97

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 WARM CAL MODE P1 15-JUL-00 15:40:37 SCAN NUMBER 128
[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 31 TO 46

NO	DATA	TEMP C	NO	DATA	TEMP C
31 IF AMP CH 14	22458	31.00	39 A1-1 WARM LOAD 4	24212	24.85
32 IF AMP CH 12	22275	30.98	40 A1-1 WARM LOAD C	24284	24.96
33 RF SHELF A1-1	22415	32.12	41 A1-2 WARM LOAD 1	24995	26.67
34 RF SHELF A1-2	23256	32.90	42 A1-2 WARM LOAD 2	25142	26.61
35 DETECTOR/PREAMP	20812	28.39	43 A1-2 WARM LOAD 3	25314	26.75
36 A1-1 WARM LOAD 1	24265	24.83	44 A1-2 WARM LOAD 4	25077	26.76
37 A1-1 WARM LOAD 2	24039	24.81	45 A1-2 WARM LOAD C	24996	26.70
38 A1-1 WARM LOAD 3	24250	24.85	THERMAL REFERENCE	25330	

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT TOUCHSCREEN BUTTON 2

```
AMSU  A1-33 A1.EXE;62 WARM CAL MODE      P1 15-JUL-00 15:41:05  SCAN NUMBER   132
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                                   ANALOG DATA  1 TO 18

 1 A1-1 SCANR MOTOR   216   25.38 DEG C 10 ANTENNA DRIVE              15VDC  14.96
 2 A1-2 SCANR MOTOR   216   26.14 DEG C 11 SIGNAL PROCESSING         -15VDC -15.01
 3 A1-1 RF SHELF      219   29.08 DEG C 12 ANTENNA DRIVE             -15VDC -15.01
 4 A1-2 RF SHELF      220   30.87 DEG C 13 RECEIVER AMPLIFIER          8VDC   8.00
 5 A1-1 WARM LOAD     216   26.23 DEG C 14 SIGNAL PROCESSOR           5 VDC   5.00
 6 A1-2 WARM LOAD     217   28.66 DEG C 15 ANTENNA DRIVE              5 VDC   4.99
 7 ANT A1-1 DRIVE MOTOR CURRENT     1.88 16 RECEIVER MIXER/IF          10VDC   9.92
 8 ANT A1-2 DRIVE MOTOR CURRENT     1.88 17 PHASE LOCK LOOP CH9/14  15VDC  15.03
 9 SIGNAL PROCESSING      +15VDC  15.01 18 PHASE LOCK LOOP CH9/14 -15VDC -14.97
[ 21 ] UP                [ 22 ] DOWN

          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

```
AMSU  A1-33 A1.EXE;62 WARM CAL MODE      P1 15-JUL-00 15:41:17  SCAN NUMBER   133
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                                ANALOG DATA 10 TO 27

10 ANTENNA DRIVE            15VDC  14.93 19 L.O. VOLTAGE     CH 8          10.00
11 SIGNAL PROCESSING       -15VDC -15.01 20 L.O. VOLTAGE     CH 7           9.97
12 ANTENNA DRIVE           -15VDC -15.01 21 L.O. VOLTAGE     CH 6          10.00
13 RECEIVER AMPLIFIER        8VDC   8.00 22 L.O. VOLTAGE     CH 3          10.00
14 SIGNAL PROCESSOR         5 VDC   5.00 23 L.O. VOLTAGE     CH 4          10.02
15 ANTENNA DRIVE            5 VDC   4.98 24 L.O. VOLTAGE     CH 5          10.00
16 RECEIVER MIXER/IF        10VDC   9.91 25 PLLO # 2 LOCK DETECT            0.08
17 PHASE LOCK LOOP CH9/14   15VDC  15.04 26 PLLO # 1 LOCK DETECT            4.39
18 PHASE LOCK LOOP CH9/14  -15VDC -14.96 27 L.O. VOLTAGE     CH15          14.96
[ 21 ] UP                  [ 22 ] DOWN

          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

TEST DATA SHEET 27
Digital-A Data Output Cold Cal Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.3)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1	255	255	P
	0002	Sync Sequence Byte 2	255	255	P
	0003	Sync Sequence Byte 3	255	255	P
[II]	0004	Unit I.D. and Serial N	33	*	P
[III]	0005	Digital-B Data Byte 1	8	8	P
	0006	Digital-B Data Byte 2	14	14	P
	0007	Digital-B Data Byte 3	0	0	P
	0008	Digital-B Data Byte 4	0	0	P

* AMSU A1 Identification Words (data entered in decimal system)

	Binary	Decimal
AMSU-A1 S/N 101	00000001	1
AMSU-A1 S/N 102	00000101	5
AMSU-A1 S/N 103	00001001	9
AMSU-A1 S/N 104	00001101	13
AMSU-A1 S/N 105	00010001	17
AMSU-A1 S/N 106	00010101	21
AMSU-A1 S/N 107	00011001	25
AMSU-A1 S/N 108	00011101	29
AMSU-A1 S/N 109	00100001	33

Circle Test: CPT FINAL LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Joseph Sanford 1-17-00
Customer Representative (Flight Hardware Only) Date

Quality Control QA 289 7/15/00 Date

TEST DATA SHEET 28 (Sheet 1 of 2)
Reflector Position Warm Cal Mode Section [IV], Reflector Position Cold Cal Mode Section [IV], and Reflector Position Nadir Mode Section [IV] (Paragraphs 3.2.4.3.4.2, 3.2.4.3.4.3, and 3.2.4.3.4.4)

BP	A1-1 Reflector			
	Para No.	Position*	Required**	Pass/Fail
CC	3.2.4.3.4.3, Step 4			
	a.	6012	6016	P
	b.	5941	5940	P
	c.	5864	5864	P
	d.	5713	5713	P

CC = Cold Cal

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

3.2.4.3.4.3, Step 4 Substep	MSB	LSB
a.	0	0
b.	0	1
c.	1	0
d.	1	1

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ray Hartberg 7-15-00
Test Systems Engineer Date

J Sanford 7-17-00
Customer Representative Date
(Flight Hardware Only)

Judie Herbey 7-15-00
Quality Control Date

TEST DATA SHEET 28 (Sheet 2 of 2)
Reflector Position Warm Cal Mode Section [IV], Reflector Position Cold Cal Mode Section [IV], and Reflector Position Nadir Mode Section [IV (Paragraphs 3.2.4.3.4.2, 3.2.4.3.4.3, and 3.2.4.3.4.4)

BP	A1-2 Reflector			
	Para No.	Position*	Required**	Pass/Fail
CC	3.2.4.3.4.3, Step 4			
	a.	5826	5834	P
	b.	5758	5758	P
	c.	5682	5682	P
	d.	5532	5531	P

CC = Cold Cal

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required range for instrument serial number from TDS 6 of AE-26002/1 ±10 counts. Rewriting range on this data sheet is optional.

3.2.4.3.4.3, Step 4 Substep	MSB	LSB
a.	0	0
b.	0	1
c.	1	0
d.	1	1

Circle Test: FINAL CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer: Ray Heckberg Date: 7-15-00

Customer Representative (Flight Hardware Only): J. Sanford Date: 7-17-00

Quality Control: Judy Nersey Date: 7-15-00

```
AMSU  A1-33 A1.EXE;62 COLD CAL MODE      P1 15-JUL-00 15:43:46  SCAN NUMBER   152
[ 5 ] DIGITAL A DATA  ELEMENT 0000
[ 6 ] DIGITAL B DATA  ELEMENT   00
[ 7 ] ANALOG DATA     ELEMENT   00

                                        COMMANDS
[ 9 ]  MODULE POWER =        CONNECT      ANTENNA IN COLD CAL POSIT = YES [ 15 ]
[ 10 ] SURVIVAL HEATER POWER =     OFF    ANTENNA IN NADIR POSITION = NO  [ 16 ]
[ 11 ] MODULE TOTALLY OFF =        ON     ANTENNA IN FULL SCAN MODE = NO  [ 17 ]
[ 12 ] SCANNER A1 - 1 POWER =      ON     PLL POWER =           PLLO # 1  [ 18 ]
[ 13 ] SCANNER A1 - 2 POWER =      ON     COLD CAL POSITION MSB =   ZERO [ 19 ]
[ 14 ] ANTENNA IN WARM CAL POSIT = NO     COLD CAL POSITION LSB =   ZERO [ 20 ]
          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL      [ 1 ] RETURN
 ERROR ... BUTTON ENTRY OUT OF RANGE ... TRY AGAIN (0001 TO    23) 3
```

COLD CAL
3.2.4.3.4.3

S/O: 787920 OP: 0830
P/N: 1331720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00
QUALITY: [signature] 7/15/00

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	SYNC SEQUENCE BYTE 1	11111111	572	COLD CAL SAMPLE 17 CH 8	14940
2	SYNC SEQUENCE BYTE 2	11111111	574	CH 9	16298
3	SYNC SEQUENCE BYTE 3	11111111	576	CH 10	16001
4	UNIT ID AND SERIAL NO	00100001	578	CH 11	16201
5	DIGITAL B DATA BYTE 1	00001000	580	CH 12	16617
6	DIGITAL B DATA BYTE 2	00001110	582	CH 13	16391
7	DIGITAL B DATA BYTE 3	00000000	584	CH 14	16776
8	DIGITAL B DATA BYTE 4	00000000	586	CH 15	14865
10	REFLECTOR 1 POSITION 1	6012	588	REFLECTOR 1 POSITION 18	6012
12	REFLECTOR 2 POSITION 1	5826	590	REFLECTOR 2 POSITION 18	5826
14	REFL 1 POS 1 2ND LOOK	6012	592	REFL 1 POS 18 2ND LOOK	6012
16	REFL 2 POS 1 2ND LOOK	5826	594	REFL 2 POS 18 2ND LOOK	5826
18	COLD CAL SAMPLE 1 CH 3	16738	596	COLD CAL SAMPLE 18 CH 3	16743
20	CH 4	16203	598	CH 4	16205
22	CH 5	16788	600	CH 5	16788
24	CH 6	16738	602	CH 6	16737
26	CH 7	16446	604	CH 7	16448
28	CH 8	14940	606	CH 8	14942
30	CH 9	16300	608	CH 9	16298
32	CH 10	16000	610	CH 10	16003
34	CH 11	16201	612	CH 11	16191
36	CH 12	16617	614	CH 12	16620
38	CH 13	16393	616	CH 13	16387
40	CH 14	16766	618	CH 14	16795
42	CH 15	14865	620	CH 15	14866
44	REFLECTOR 1 POSITION 2	6012	622	REFLECTOR 1 POSITION 19	6012
46	REFLECTOR 2 POSITION 2	5826	624	REFLECTOR 2 POSITION 19	5826
48	REFL 1 POS 2 2ND LOOK	6012	626	REFL 1 POS 19 2ND LOOK	6011
50	REFL 2 POS 2 2ND LOOK	5826	628	REFL 2 POS 19 2ND LOOK	5826
52	COLD CAL SAMPLE 2 CH 3	16744	630	COLD CAL SAMPLE 19 CH 3	16741
54	CH 4	16204	632	CH 4	16205
56	CH 5	16787	634	CH 5	16786
58	CH 6	16739	636	CH 6	16733
60	CH 7	16448	638	CH 7	16446
62	CH 8	14938	640	CH 8	14943
64	CH 9	16298	642	CH 9	16300
66	CH 10	16002	644	CH 10	15999
68	CH 11	16195	646	CH 11	16191
70	CH 12	16620	648	CH 12	16619
72	CH 13	16374	650	CH 13	16397
74	CH 14	16809	652	CH 14	16789
76	CH 15	14864	654	CH 15	14866
78	REFLECTOR 1 POSITION 3	6011	656	REFLECTOR 1 POSITION 20	6012
80	REFLECTOR 2 POSITION 3	5826	658	REFLECTOR 2 POSITION 20	5826
82	REFL 1 POS 3 2ND LOOK	6012	660	REFL 1 POS 20 2ND LOOK	6012
84	REFL 2 POS 3 2ND LOOK	5826	662	REFL 2 POS 20 2ND LOOK	5826
86	COLD CAL SAMPLE 3 CH 3	16741	664	COLD CAL SAMPLE 20 CH 3	16740
88	CH 4	16206	666	CH 4	16205
90	CH 5	16789	668	CH 5	16786
92	CH 6	16735	670	CH 6	16737

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	CH 7	16450	672	CH 7	16448
96	CH 8	14940	674	CH 8	14941
98	CH 9	16297	676	CH 9	16300
100	CH 10	16005	678	CH 10	15999
102	CH 11	16196	680	CH 11	16199
104	CH 12	16626	682	CH 12	16625
106	CH 13	16389	684	CH 13	16391
108	CH 14	16787	686	CH 14	16783
110	CH 15	14866	688	CH 15	14865
112	REFLECTOR 1 POSITION 4	6012	690	REFLECTOR 1 POSITION 21	6011
114	REFLECTOR 2 POSITION 4	5826	692	REFLECTOR 2 POSITION 21	5826
116	REFL 1 POS 4 2ND LOOK	6012	694	REFL 1 POS 21 2ND LOOK	6012
118	REFL 2 POS 4 2ND LOOK	5826	696	REFL 2 POS 21 2ND LOOK	5826
120	COLD CAL SAMPLE 4 CH 3	16748	698	COLD CAL SAMPLE 21 CH 3	16739
122	CH 4	16205	700	CH 4	16205
124	CH 5	16786	702	CH 5	16789
126	CH 6	16737	704	CH 6	16734
128	CH 7	16448	706	CH 7	16448
130	CH 8	14945	708	CH 8	14943
132	CH 9	16296	710	CH 9	16297
134	CH 10	16002	712	CH 10	16006
136	CH 11	16194	714	CH 11	16200
138	CH 12	16620	716	CH 12	16621
140	CH 13	16386	718	CH 13	16381
142	CH 14	16756	720	CH 14	16770
144	CH 15	14866	722	CH 15	14866
146	REFLECTOR 1 POSITION 5	6012	724	REFLECTOR 1 POSITION 22	6012
148	REFLECTOR 2 POSITION 5	5826	726	REFLECTOR 2 POSITION 22	5826
150	REFL 1 POS 5 2ND LOOK	6012	728	REFL 1 POS 22 2ND LOOK	6012
152	REFL 2 POS 5 2ND LOOK	5826	730	REFL 2 POS 22 2ND LOOK	5826
154	COLD CAL SAMPLE 5 CH 3	16749	732	COLD CAL SAMPLE 22 CH 3	16735
156	CH 4	16205	734	CH 4	16201
158	CH 5	16786	736	CH 5	16788
160	CH 6	16740	738	CH 6	16738
162	CH 7	16447	740	CH 7	16447
164	CH 8	14941	742	CH 8	14943
166	CH 9	16298	744	CH 9	16295
168	CH 10	15999	746	CH 10	15998
170	CH 11	16199	748	CH 11	16202
172	CH 12	16623	750	CH 12	16621
174	CH 13	16390	752	CH 13	16390
176	CH 14	16785	754	CH 14	16764
178	CH 15	14865	756	CH 15	14866
180	REFLECTOR 1 POSITION 6	6012	758	REFLECTOR 1 POSITION 23	6012
182	REFLECTOR 2 POSITION 6	5826	760	REFLECTOR 2 POSITION 23	5826
184	REFL 1 POS 6 2ND LOOK	6011	762	REFL 1 POS 23 2ND LOOK	6012
186	REFL 2 POS 6 2ND LOOK	5826	764	REFL 2 POS 23 2ND LOOK	5826
188	COLD CAL SAMPLE 6 CH 3	16740	766	COLD CAL SAMPLE 23 CH 3	16740
190	CH 4	16206	768	CH 4	16206
192	CH 5	16787	770	CH 5	16789

COLD CAL MODE

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
194	CH 6	16736	772	CH 6	16735
196	CH 7	16449	774	CH 7	16448
198	CH 8	14945	776	CH 8	14941
200	CH 9	16296	778	CH 9	16299
202	CH 10	16004	780	CH 10	16007
204	CH 11	16197	782	CH 11	16200
206	CH 12	16616	784	CH 12	16606
208	CH 13	16383	786	CH 13	16384
210	CH 14	16779	788	CH 14	16793
212	CH 15	14868	790	CH 15	14864
214	REFLECTOR 1 POSITION 7	6012	792	REFLECTOR 1 POSITION 24	6012
216	REFLECTOR 2 POSITION 7	5826	794	REFLECTOR 2 POSITION 24	5826
218	REFL 1 POS 7 2ND LOOK	6012	796	REFL 1 POS 24 2ND LOOK	6012
220	REFL 2 POS 7 2ND LOOK	5826	798	REFL 2 POS 24 2ND LOOK	5826
222	COLD CAL SAMPLE 7 CH 3	16742	800	COLD CAL SAMPLE 24 CH 3	16741
224	CH 4	16202	802	CH 4	16204
226	CH 5	16786	804	CH 5	16787
228	CH 6	16737	806	CH 6	16735
230	CH 7	16449	808	CH 7	16448
232	CH 8	14948	810	CH 8	14939
234	CH 9	16300	812	CH 9	16295
236	CH 10	16003	814	CH 10	16004
238	CH 11	16198	816	CH 11	16197
240	CH 12	16629	818	CH 12	16618
242	CH 13	16397	820	CH 13	16384
244	CH 14	16787	822	CH 14	16797
246	CH 15	14867	824	CH 15	14866
248	REFLECTOR 1 POSITION 8	6011	826	REFLECTOR 1 POSITION 25	6012
250	REFLECTOR 2 POSITION 8	5826	828	REFLECTOR 2 POSITION 25	5826
252	REFL 1 POS 8 2ND LOOK	6012	830	REFL 1 POS 25 2ND LOOK	6012
254	REFL 2 POS 8 2ND LOOK	5826	832	REFL 2 POS 25 2ND LOOK	5826
256	COLD CAL SAMPLE 8 CH 3	16742	834	COLD CAL SAMPLE 25 CH 3	16742
258	CH 4	16205	836	CH 4	16207
260	CH 5	16787	838	CH 5	16786
262	CH 6	16738	840	CH 6	16734
264	CH 7	16447	842	CH 7	16449
266	CH 8	14944	844	CH 8	14944
268	CH 9	16302	846	CH 9	16297
270	CH 10	16001	848	CH 10	16000
272	CH 11	16198	850	CH 11	16199
274	CH 12	16619	852	CH 12	16628
276	CH 13	16393	854	CH 13	16396
278	CH 14	16782	856	CH 14	16785
280	CH 15	14866	858	CH 15	14867
282	REFLECTOR 1 POSITION 9	6012	860	REFLECTOR 1 POSITION 26	6012
284	REFLECTOR 2 POSITION 9	5826	862	REFLECTOR 2 POSITION 26	5826
286	REFL 1 POS 9 2ND LOOK	6011	864	REFL 1 POS 26 2ND LOOK	6012
288	REFL 2 POS 9 2ND LOOK	5826	866	REFL 2 POS 26 2ND LOOK	5826
290	COLD CAL SAMPLE 9 CH 3	16738	868	COLD CAL SAMPLE 26 CH 3	16742
292	CH 4	16202	870	CH 4	16206

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
294	CH 5	16789	872	CH 5	16785
296	CH 6	16736	874	CH 6	16736
298	CH 7	16445	876	CH 7	16443
300	CH 8	14940	878	CH 8	14939
302	CH 9	16301	880	CH 9	16298
304	CH 10	16002	882	CH 10	16001
306	CH 11	16201	884	CH 11	16194
308	CH 12	16617	886	CH 12	16623
310	CH 13	16388	888	CH 13	16370
312	CH 14	16771	890	CH 14	16786
314	CH 15	14866	892	CH 15	14866
316	REFLECTOR 1 POSITION 10	6012	894	REFLECTOR 1 POSITION 27	6012
318	REFLECTOR 2 POSITION 10	5826	896	REFLECTOR 2 POSITION 27	5826
320	REFL 1 POS 10 2ND LOOK	6012	898	REFL 1 POS 27 2ND LOOK	6012
322	REFL 2 POS 10 2ND LOOK	5826	900	REFL 2 POS 27 2ND LOOK	5826
324	COLD CAL SAMPLE 10 CH 3	16745	902	COLD CAL SAMPLE 27 CH 3	16743
326	CH 4	16205	904	CH 4	16203
328	CH 5	16785	906	CH 5	16787
330	CH 6	16734	908	CH 6	16738
332	CH 7	16444	910	CH 7	16447
334	CH 8	14940	912	CH 8	14943
336	CH 9	16295	914	CH 9	16296
338	CH 10	16006	916	CH 10	16000
340	CH 11	16193	918	CH 11	16195
342	CH 12	16620	920	CH 12	16622
344	CH 13	16382	922	CH 13	16386
346	CH 14	16793	924	CH 14	16797
348	CH 15	14864	926	CH 15	14867
350	REFLECTOR 1 POSITION 11	6011	928	REFLECTOR 1 POSITION 28	6012
352	REFLECTOR 2 POSITION 11	5826	930	REFLECTOR 2 POSITION 28	5826
354	REFL 1 POS 11 2ND LOOK	6012	932	REFL 1 POS 28 2ND LOOK	6012
356	REFL 2 POS 11 2ND LOOK	5826	934	REFL 2 POS 28 2ND LOOK	5826
358	COLD CAL SAMPLE 11 CH 3	16740	936	COLD CAL SAMPLE 28 CH 3	16745
360	CH 4	16206	938	CH 4	16208
362	CH 5	16789	940	CH 5	16788
364	CH 6	16740	942	CH 6	16734
366	CH 7	16447	944	CH 7	16445
368	CH 8	14942	946	CH 8	14939
370	CH 9	16297	948	CH 9	16300
372	CH 10	16003	950	CH 10	16000
374	CH 11	16196	952	CH 11	16194
376	CH 12	16612	954	CH 12	16620
378	CH 13	16390	956	CH 13	16387
380	CH 14	16766	958	CH 14	16797
382	CH 15	14865	960	CH 15	14866
384	REFLECTOR 1 POSITION 12	6012	962	REFLECTOR 1 POSITION 29	6012
386	REFLECTOR 2 POSITION 12	5826	964	REFLECTOR 2 POSITION 29	5826
388	REFL 1 POS 12 2ND LOOK	6012	966	REFL 1 POS 29 2ND LOOK	6012
390	REFL 2 POS 12 2ND LOOK	5826	968	REFL 2 POS 29 2ND LOOK	5826
392	COLD CAL SAMPLE 12 CH 3	16742	970	COLD CAL SAMPLE 29 CH 3	16744

COLD CAL MODE

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
394	CH 4	16206	972	CH 4	16202
396	CH 5	16789	974	CH 5	16788
398	CH 6	16734	976	CH 6	16734
400	CH 7	16449	978	CH 7	16449
402	CH 8	14937	980	CH 8	14941
404	CH 9	16296	982	CH 9	16297
406	CH 10	16005	984	CH 10	16002
408	CH 11	16196	986	CH 11	16199
410	CH 12	16624	988	CH 12	16619
412	CH 13	16375	990	CH 13	16389
414	CH 14	16772	992	CH 14	16769
416	CH 15	14865	994	CH 15	14865
418	REFLECTOR 1 POSITION 13	6011	996	REFLECTOR 1 POSITION 30	6012
420	REFLECTOR 2 POSITION 13	5826	998	REFLECTOR 2 POSITION 30	5826
422	REFL 1 POS 13 2ND LOOK	6012	1000	REFL 1 POS 30 2ND LOOK	6012
424	REFL 2 POS 13 2ND LOOK	5826	1002	REFL 2 POS 30 2ND LOOK	5826
426	COLD CAL SAMPLE 13 CH 3	16742	1004	COLD CAL SAMPLE 30 CH 3	16742
428	CH 4	16205	1006	CH 4	16201
430	CH 5	16788	1008	CH 5	16790
432	CH 6	16738	1010	CH 6	16735
434	CH 7	16451	1012	CH 7	16448
436	CH 8	14941	1014	CH 8	14941
438	CH 9	16299	1016	CH 9	16301
440	CH 10	16002	1018	CH 10	16006
442	CH 11	16198	1020	CH 11	16199
444	CH 12	16624	1022	CH 12	16618
446	CH 13	16388	1024	CH 13	16382
448	CH 14	16793	1026	CH 14	16788
450	CH 15	14865	1028	CH 15	14865
452	REFLECTOR 1 POSITION 14	6012	1030	REFLECTOR 1 COLD CAL POS	0E
454	REFLECTOR 2 POSITION 14	5826	1032	REFLECTOR 2 COLD CAL POS	0E
456	REFL 1 POS 14 2ND LOOK	6012	1034	REFL 1 COLD CAL 2ND LOOK	0E
458	REFL 2 POS 14 2ND LOOK	5826	1036	REFL 2 COLD CAL 2ND LOOK	0E
460	COLD CAL SAMPLE 14 CH 3	16737	1038	COLD CAL DATA 1 CH 3	0
462	CH 4	16202	1040	CH 4	0
464	CH 5	16788	1042	CH 5	0
466	CH 6	16735	1044	CH 6	0
468	CH 7	16448	1046	CH 7	0
470	CH 8	14938	1048	CH 8	0
472	CH 9	16299	1050	CH 9	0
474	CH 10	16002	1052	CH 10	0
476	CH 11	16190	1054	CH 11	0
478	CH 12	16616	1056	CH 12	0
480	CH 13	16377	1058	CH 13	0
482	CH 14	16790	1060	CH 14	0
484	CH 15	14865	1062	CH 15	0
486	REFLECTOR 1 POSITION 15	6012	1064	COLD CAL DATA 2 CH 3	0
488	REFLECTOR 2 POSITION 15	5826	1066	CH 4	0
490	REFL 1 POS 15 2ND LOOK	6012	1068	CH 5	0
492	REFL 2 POS 15 2ND LOOK	5826	1070	CH 6	0

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
494	COLD CAL SAMPLE 15 CH 3	16737	1072	CH 7	0
496	CH 4	16206	1074	CH 8	0
498	CH 5	16788	1076	CH 9	0
500	CH 6	16741	1078	CH 10	0
502	CH 7	16450	1080	CH 11	0
504	CH 8	14941	1082	CH 12	0
506	CH 9	16295	1084	CH 13	0
508	CH 10	16002	1086	CH 14	0
510	CH 11	16194	1088	CH 15	0
512	CH 12	16618	1182	REFLECTOR 1 WARM CAL POS	0E
514	CH 13	16385	1184	REFLECTOR 2 WARM CAL POS	0E
516	CH 14	16794	1186	REFL 1 WARM CAL 2ND LOOK	0E
518	CH 15	14865	1188	REFL 2 WARM CAL 2ND LOOK	0E
520	REFLECTOR 1 POSITION 16	6012	1190	WARM CAL DATA 1 CH 3	0
522	REFLECTOR 2 POSITION 16	5826	1192	CH 4	0
524	REFL 1 POS 16 2ND LOOK	6012	1194	CH 5	0
526	REFL 2 POS 16 2ND LOOK	5826	1196	CH 6	0
528	COLD CAL SAMPLE 16 CH 3	16745	1198	CH 7	0
530	CH 4	16205	1200	CH 8	0
532	CH 5	16787	1202	CH 9	0
534	CH 6	16739	1204	CH 10	0
536	CH 7	16449	1206	CH 11	0
538	CH 8	14938	1208	CH 12	0
540	CH 9	16296	1210	CH 13	0
542	CH 10	16005	1212	CH 14	0
544	CH 11	16192	1214	CH 15	0
546	CH 12	16620	1216	WARM CAL DATA 2 CH 3	0
548	CH 13	16372	1218	CH 4	0
550	CH 14	16780	1220	CH 5	0
552	CH 15	14865	1222	CH 6	0
554	REFLECTOR 1 POSITION 17	6012	1224	CH 7	0
556	REFLECTOR 2 POSITION 17	5826	1226	CH 8	0
558	REFL 1 POS 17 2ND LOOK	6012	1228	CH 9	0
560	REFL 2 POS 17 2ND LOOK	5826	1230	CH 10	0
562	COLD CAL SAMPLE 17 CH 3	16740	1232	CH 11	0
564	CH 4	16205	1234	CH 12	0
566	CH 5	16789	1236	CH 13	0
568	CH 6	16736	1238	CH 14	0
570	CH 7	16449	1240	CH 15	0

COLD CAL MODE

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
1090	SCAN MOTOR A1-1	18432	24.38
1092	SCAN MOTOR A1-2	19733	25.68
1094	FEEDHORN A1-1	20500	27.76
1096	FEEDHORN A1-2	21566	29.80
1098	RF MUX A1-1	22385	30.91
1100	RF MUX A1-2	23532	33.12
1102	LOCAL OSCILLATOR CHANNEL 3	24654	35.24
1104	LOCAL OSCILLATOR CHANNEL 4	24734	35.06
1106	LOCAL OSCILLATOR CHANNEL 5	24079	34.32
1108	LOCAL OSCILLATOR CHANNEL 6	21815	30.19
1110	LOCAL OSCILLATOR CHANNEL 7	22977	32.19
1112	LOCAL OSCILLATOR CHANNEL 8	24308	34.48
1114	LOCAL OSCILLATOR CHANNEL 15	24175	33.95
1116	PLL LO #2 CHANNELS 9 THROUGH 14	15212	30.64
1118	PLL LO #1 CHANNELS 9 THROUGH 14	25447	36.84
1120	SPARE (NOT USED)	32767	51.27
1122	MIXER/IF AMPLIFIER CHANNEL 3	24237	33.61
1124	MIXER/IF AMPLIFIER CHANNEL 4	24243	33.83
1126	MIXER/IF AMPLIFIER CHANNEL 5	23799	33.36
1128	MIXER/IF AMPLIFIER CHANNEL 6	22587	31.37
1130	MIXER/IF AMPLIFIER CHANNEL 7	22785	32.00
1132	MIXER/IF AMPLIFIER CHANNEL 8	24084	33.84
1134	MIXER/IF AMPLIFIER CH 9 THRU 14	22546	30.80
1136	MIXER/IF AMPLIFIER CHANNEL 15	23590	33.77
1138	IF AMPLIFIER CHANNEL 11 THRU 14	23684	33.56
1140	IF AMPLIFIER CHANNEL 9	23714	33.68
1142	IF AMPLIFIER CHANNEL 10	23887	33.70
1144	IF AMPLIFIER CHANNEL 11	22399	31.12
1146	DC/DC CONVERTER	23821	33.68
1148	IF AMPLIFIER CHANNEL 13	22388	31.09
1150	IF AMPLIFIER CHANNEL 14	22484	31.05
1152	IF AMPLIFIER CHANNEL 12	22298	31.02
1154	RF SHELF A1-1	22443	32.17
1156	RF SHELF A1-2	23289	32.96
1158	DETECTOR/PREAMPLIFIER ASSEMBLY	20832	28.43
1160	A1-1 WARM LOAD 1	24272	24.85
1162	A1-1 WARM LOAD 2	24051	24.83
1164	A1-1 WARM LOAD 3	24259	24.87
1166	A1-1 WARM LOAD 4	24222	24.87
1168	A1-1 WARM LOAD CENTER	24291	24.97
1170	A1-2 WARM LOAD 1	25011	26.70
1172	A1-2 WARM LOAD 2	25158	26.64
1174	A1-2 WARM LOAD 3	25324	26.77
1176	A1-2 WARM LOAD 4	25088	26.78
1178	A1-2 WARM LOAD CENTER	25003	26.72
1180	TEMP SENSOR REFERENCE VOLTAGE	25331	

COLD CAL MODE

DESCRIPTION	STATUS	STATUS	STATUS
SCANNER A1-1 POWER	ON	ON	ON
SCANNER A1-2 POWER	ON	ON	ON
PLL POWER	PLLO # 1	PLLO # 1	PLLO # 1
ANTENNA IN WARM CAL POSITION MODE	NO	NO	NO
ANTENNA IN COLD CAL POSITION MODE	YES	YES	YES
ANTENNA IN NADIR POSITION MODE	NO	NO	NO
ANTENNA IN FULL SCAN MODE	NO	NO	NO
SURVIVAL HEATER POWER	OFF	OFF	OFF
MODULE POWER	CONNECT	CONNECT	CONNECT
COLD CAL POSITION MSB	ZERO	ZERO	ZERO
COLD CAL POSITION LSB	ZERO	ZERO	ZERO

ANALOG DATA

DESCRIPTION	VALUE	DEG C	VALUE	DEG C	VALUE	DEG C
A1-1 SCANNER MOTOR TEMPERATURE	216	25.1	216	25.1	216	25.1
A1-2 SCANNER MOTOR TEMPERATURE	217	26.2	217	26.2	217	26.2
A1-1 RF SHELF TEMPERATURE	219	28.8	219	28.8	219	28.8
A1-2 RF SHELF TEMPERATURE	221	31.5	221	31.5	221	31.5
A1-1 WARM LOAD TEMPERATURE	215	24.7	215	24.7	215	24.7
A1-2 WARM LOAD TEMPERATURE	217	27.7	217	27.7	217	27.7

DESCRIPTION	VALUE	AMPS/ VOLTS	VALUE	AMPS/ VOLTS	VALUE	AMPS/ VOLTS
A1-1 ANTENNA DRIVE MOTOR CURRENT (AVRG)	4	1.86	4	1.86	4	1.86
A1-2 ANTENNA DRIVE MOTOR CURRENT (AVRG)	4	1.86	4	1.86	4	1.86
SIGNAL PROCESSING +15 VDC	170	14.99	170	14.99	170	14.99
ANTENNA DRIVE +15 VDC	169	14.90	169	14.90	169	14.90
SIGNAL PROCESSING -15 VDC	147	-15.05	147	-15.05	147	-15.05
ANTENNA DRIVE -15 VDC	146	-15.05	146	-15.05	146	-15.05
RECEIVER AMPLIFIER +8 VDC	156	8.00	156	8.00	156	8.00
SIGNAL PROCESSOR +5 VDC	144	4.99	144	4.99	144	4.99
ANTENNA DRIVE +5 VDC	144	4.96	144	4.96	144	4.96
RECEIVER MIXER/IF +10 VDC	168	9.89	168	9.89	168	9.89
PHASE LOCK LOOP (CHANNEL 9/14) +15 VDC	168	14.99	168	14.99	168	14.99
PHASE LOCK LOOP (CHANNEL 9/14) -15 VDC	143	-15.00	143	-15.00	143	-15.00
L.O. VOLTAGE (CHANNEL 8) VDC	171	9.99	171	9.99	171	9.99
L.O. VOLTAGE (CHANNEL 7) VDC	170	9.94	170	9.94	170	9.94
L.O. VOLTAGE (CHANNEL 6) VDC	171	9.97	171	9.97	171	9.97
L.O. VOLTAGE (CHANNEL 3) VDC	171	9.98	171	9.98	171	9.98
L.O. VOLTAGE (CHANNEL 4) VDC	171	9.99	171	9.99	171	9.99
L.O. VOLTAGE (CHANNEL 5) VDC	170	9.95	170	9.95	171	10.00
PLLO # 2 LOCK DETECT	4	0.08	4	0.08	4	0.08
PLLO # 1 LOCK DETECT	219	4.38	219	4.38	219	4.38
L.O. VOLTAGE (CHANNEL 15) VDC	169	14.90	169	14.90	169	14.90

COLD CAL MODE

PRT TEMPERATURES	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
VARIABLE TARGET	615	42.00	601	14.00
	616	43.00	602	15.00
	617	44.00	603	16.00
	618	45.00	604	17.00
	619	46.00	605	18.00
	620	47.00	606	19.00
	621	48.00	607	20.00
FIXED TARGET	622	49.00	608	21.00
	623	50.00	609	22.00
	624	51.00	610	23.00
	625	52.00	611	24.00
	626	53.00	612	25.00
	627	67.00	613	69.00
	628	68.00	614	70.00
BASEPLATE	629	71.00	630	72.00
	631	26.00	632	27.00

THERMOCOUPLE TEMPERATURES	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
FIXED TARGET SHROUD	558	5.00	537	34.00
	559	6.00	538	35.00
VARIABLE TARGET SHROUD	550	7.00	524	36.00
	551	8.00	525	37.00
FIXED TARGET N2	506	57.00	502	30.00
	507	58.00	503	31.00
VARIABLE TARGET N2	516	59.00	511	32.00
	517	60.00	512	33.00
HEATER N2	514	1.00	509	38.00
	515	2.00	510	39.00
FIXED TARGET FLOW METER	508	63.00	504	61.00
VARIABLE TARGET FLOW METER	518	64.00	513	62.00
BASEPLATE HEATER N2	519	3.00	520	4.00
BASEPLATE N2	521	9.00	522	10.00
BASEPLATE FLOW METER	523	65.00		
ADJUNCT RADIATORS	575	73.00	577	74.00
	579	75.00	581	76.00

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:45:57 SCAN NUMBER 168
[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 1

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	6011	6012	9	6012	6012	17	6011	6012	25	6012	6012
2	6012	6012	10	6011	6012	18	6012	6012	26	6012	6011
3	6012	6012	11	6012	6012	19	6012	6012	27	6012	6012
4	6012	6012	12	6012	6012	20	6012	6012	28	6011	6012
5	6012	6012	13	6012	6011	21	6011	6012	29	6012	6012
6	6012	6011	14	6012	6012	22	6012	6012	30	6012	6012
7	6012	6012	15	6012	6011	23	6012	6012	CC	0	0
8	6011	6012	16	6012	6012	24	6012	6012	WC	0	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT TOUCHSCREEN BUTTON 2

MSB LSB
0 0

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:46:13 SCAN NUMBER 170
[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 2

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	5826	5826	9	5826	5826	17	5826	5826	25	5826	5826
2	5826	5826	10	5826	5826	18	5826	5826	26	5826	5826
3	5826	5826	11	5826	5826	19	5826	5826	27	5826	5826
4	5826	5826	12	5826	5826	20	5826	5826	28	5826	5826
5	5826	5826	13	5826	5826	21	5826	5826	29	5826	5826
6	5826	5826	14	5826	5826	22	5826	5826	30	5826	5826
7	5826	5826	15	5826	5826	23	5826	5826	CC	0	0
8	5826	5826	16	5826	5826	24	5826	5826	WC	0	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT TOUCHSCREEN BUTTON 2

M 6
0 0

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:49:20 SCAN NUMBER 194

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 1

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	5941	5941	9	5941	5941	17	5941	5942	25	5941	5941
2	5941	5941	10	5941	5942	18	5942	5942	26	5941	5941
3	5941	5942	11	5942	5942	19	5942	5941	27	5941	5941
4	5941	5942	12	5942	5941	20	5941	5941	28	5941	5941
5	5941	5942	13	5941	5941	21	5941	5941	29	5941	5942
6	5942	5941	14	5941	5941	22	5941	5942	30	5941	5942
7	5941	5941	15	5941	5941	23	5941	5942	CC	0	0
8	5941	5941	16	5941	5942	24	5942	5941	WC	0	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT TOUCHSCREEN BUTTON 2

MSB LSB
0 1

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:49:30 SCAN NUMBER 195

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 2

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	5758	5758	9	5758	5758	17	5759	5758	25	5758	5759
2	5758	5758	10	5758	5758	18	5759	5758	26	5758	5759
3	5758	5758	11	5758	5759	19	5758	5758	27	5758	5759
4	5759	5758	12	5758	5759	20	5758	5758	28	5758	5758
5	5759	5758	13	5758	5758	21	5758	5758	29	5758	5758
6	5758	5758	14	5758	5758	22	5758	5758	30	5758	5758
7	5758	5758	15	5758	5758	23	5758	5758	CC	0	0
8	5758	5758	16	5758	5758	24	5758	5758	WC	0	0

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

M L

D)

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:50:40 SCAN NUMBER 204

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 1

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	5864	5864	9	5864	5864	17	5864	5864	25	5864	5864
2	5864	5864	10	5864	5864	18	5864	5864	26	5864	5864
3	5864	5864	11	5864	5865	19	5865	5864	27	5864	5864
4	5864	5864	12	5864	5864	20	5864	5865	28	5865	5864
5	5864	5865	13	5865	5864	21	5864	5864	29	5864	5864
6	5864	5864	14	5864	5865	22	5865	5864	30	5864	5864
7	5864	5864	15	5864	5864	23	5864	5864	CC	0	0
8	5864	5865	16	5865	5864	24	5864	5864	WC	0	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

MSB
1

LSB
0

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:50:52 SCAN NUMBER 205

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 2

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	5681	5681	9	5681	5682	17	5681	5681	25	5681	5681
2	5681	5682	10	5681	5681	18	5682	5681	26	5681	5681
3	5681	5681	11	5681	5681	19	5682	5682	27	5681	5681
4	5681	5681	12	5681	5681	20	5681	5681	28	5682	5682
5	5681	5681	13	5682	5681	21	5681	5681	29	5681	5681
6	5681	5681	14	5681	5682	22	5681	5681	30	5681	5681
7	5682	5681	15	5681	5681	23	5682	5682	CC	0	0
8	5682	5682	16	5681	5681	24	5681	5681	WC	0	0

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

M L

1 0

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:52:32 SCAN NUMBER 218

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 1

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	5714	5713	9	5714	5713	17	5713	5714	25	5713	5713
2	5713	5713	10	5714	5713	18	5713	5714	26	5713	5714
3	5713	5714	11	5713	5714	19	5713	5714	27	5713	5714
4	5713	5713	12	5714	5713	20	5713	5713	28	5713	5713
5	5713	5713	13	5714	5713	21	5713	5714	29	5713	5713
6	5713	5713	14	5713	5713	22	5713	5713	30	5714	5714
7	5713	5714	15	5714	5713	23	5713	5714	CC	0	0
8	5713	5714	16	5713	5714	24	5713	5714	WC	0	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

MSB /

LSB /

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:52:44 SCAN NUMBER 219
[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 2

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	5532	5532	9	5532	5532	17	5532	5532	25	5532	5532
2	5532	5532	10	5532	5532	18	5532	5532	26	5532	5532
3	5532	5532	11	5532	5532	19	5532	5532	27	5532	5532
4	5532	5532	12	5532	5532	20	5532	5532	28	5532	5532
5	5532	5532	13	5532	5532	21	5532	5532	29	5532	5532
6	5532	5532	14	5532	5532	22	5532	5532	30	5532	5532
7	5532	5532	15	5532	5532	23	5532	5532	CC	0	0
8	5532	5532	16	5532	5532	24	5532	5532	WC	0	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT TOUCHSCREEN BUTTON 2

MSB LSB
1 1

```
AMSU  A1-33 A1.EXE;62 COLD CAL MODE      P1 15-JUL-00 15:47:34   SCAN NUMBER    181
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                             ANALOG DATA  1 TO 18

 1 A1-1 SCANR MOTOR    216    25.73 DEG C 10 ANTENNA DRIVE            15VDC  14.96
 2 A1-2 SCANR MOTOR    217    26.50 DEG C 11 SIGNAL PROCESSING       -15VDC -15.00
 3 A1-1 RF SHELF       219    29.02 DEG C 12 ANTENNA DRIVE           -15VDC -15.01
 4 A1-2 RF SHELF       221    31.53 DEG C 13 RECEIVER AMPLIFIER        8VDC   8.00
 5 A1-1 WARM LOAD      215    25.97 DEG C 14 SIGNAL PROCESSOR         5 VDC   5.01
 6 A1-2 WARM LOAD      217    29.00 DEG C 15 ANTENNA DRIVE            5 VDC   4.99
 7 ANT A1-1 DRIVE MOTOR CURRENT     1.88 16 RECEIVER MIXER/IF        10VDC   9.92
 8 ANT A1-2 DRIVE MOTOR CURRENT     1.88 17 PHASE LOCK LOOP CH9/14  15VDC  15.05
 9 SIGNAL PROCESSING      +15VDC  15.01 18 PHASE LOCK LOOP CH9/14 -15VDC -14.97
[ 21 ] UP                [ 22 ] DOWN

          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

M L
/ 0

```
AMSU  A1-33 A1.EXE;62 COLD CAL MODE      P1 15-JUL-00 15:47:47  SCAN NUMBER   182
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                           ANALOG DATA 10 TO 27

10 ANTENNA DRIVE              15VDC  14.93 19 L.O. VOLTAGE      CH 8         10.00
11 SIGNAL PROCESSING         -15VDC -15.00 20 L.O. VOLTAGE      CH 7          9.98
12 ANTENNA DRIVE             -15VDC -15.01 21 L.O. VOLTAGE      CH 6          9.99
13 RECEIVER AMPLIFIER          8VDC   8.00 22 L.O. VOLTAGE      CH 3         10.00
14 SIGNAL PROCESSOR           5 VDC   5.01 23 L.O. VOLTAGE      CH 4         10.01
15 ANTENNA DRIVE              5 VDC   4.98 24 L.O. VOLTAGE      CH 5         10.00
16 RECEIVER MIXER/IF          10VDC   9.91 25 PLLO # 2 LOCK DETECT            0.08
17 PHASE LOCK LOOP CH9/14     15VDC  15.06 26 PLLO # 1 LOCK DETECT            4.39
18 PHASE LOCK LOOP CH9/14    -15VDC -14.96 27 L.O. VOLTAGE      CH15         14.96
[ 21 ] UP                   [ 22 ] DOWN

          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL      [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

MSB
/

LSB
/

TEST DATA SHEET 29

Digital-A Data Output Cold Cal Mode Radiometer Data Section [V] (Paragraph 3.2.4.3.4.3)
Condition: Cold Cal Position MSB=0 and Cold Cal Position LSB=0

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Measured*	Required**	Pass/Fail	Element (For Ref)	Measured*	Required**	Pass/Fail
01	0018	16746	16500±4000	PASS	0030	16292	16500±4000	PASS
02	0052	16735			0064	16295		
03	0086	16736			0098	16298		
04	0120	16737			0132	16298		
05	0154	16741			0166	16296		
06	0188	16736			0200	16298		
07	0222	16745			0234	16294		
08	0256	16739			0268	16298		
09	0290	16734			0302	16296		
10	0324	16739			0336	16295		
11	0356	16739			0370	16294		
12	0392	16742			0404	16299		
13	0426	16742			0438	16296		
14	0460	16742			0472	16299		
15	0494	16738			0506	16297		
16	0528	16737			0540	16298		
17	0562	16744			0574	16301		
18	0596	16740			0608	16297		
19	0630	16746			0642	16296		
20	0664	16737			0676	16300		
21	0698	16742			0710	16299		
22	0732	16738			0744	16299		
23	0766	16739			0778	16296		
24	0800	16740			0812	16295		
25	0834	16745			0846	16294		
26	0868	16743			0880	16295		
27	0902	16739			0914	16300		
28	0936	16741			0948	16294		
29	0970	16741			0982	16295		
30	1004	16738	16500±4000		1016	16296	16500±4000	
CC	1038	Ø	0		1050	Ø	0	
WC	1190	Ø	0	PASS	1202	Ø	0	PASS

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required = 16,500 ± 4000 counts.

Op. 0830

Circle Test: CPT FINAL LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 767920 S/N: 109

Ken Shane 7/15/00
Test Systems Engineer Date

[illegible] 7-17-00
Customer Representative Date
(Flight Hardware Only)

[illegible] 7/15/00
Quality Control Date

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:45:38 SCAN NUMBER 166

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA

CHANNEL 9

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16292	9	16296	17	16301	25	16294
2	16295	10	16295	18	16297	26	16295
3	16298	11	16294	19	16296	27	16300
4	16298	12	16299	20	16300	28	16294
5	16296	13	16296	21	16299	29	16295
6	16298	14	16299	22	16299	30	16296
7	16294	15	16297	23	16296	CC	0
8	16298	16	16298	24	16295	WC	0

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:45:20 SCAN NUMBER 164

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA
CHANNEL 3

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16746	9	16734	17	16744	25	16745
2	16735	10	16739	18	16740	26	16743
3	16736	11	16739	19	16746	27	16739
4	16737	12	16742	20	16737	28	16741
5	16741	13	16742	21	16742	29	16741
6	16736	14	16742	22	16738	30	16738
7	16745	15	16738	23	16739	CC	0
8	16739	16	16737	24	16740	WC	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT TOUCHSCREEN BUTTON 2

TEST DATA SHEET 30 (Sheet 1 of 2)
Cold Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.3)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1	24.85	25 ± 15	Pass
1092	A1-1 Warm Load 2	24.84	25 ± 15	
1094	A1-1 Warm Load 3	24.88	25 ± 15	
1096	A1-1 Warm Load 4	24.86	25 ± 15	
1098	A1-1 Warm Load Center	24.98	25 ± 15	
1100	A1-2 Warm Load 1	26.72	25 ± 15	
1102	A1-2 Warm Load 2	26.66	25 ± 15	
1104	A1-2 Warm Load 3	26.79	25 ± 15	
1106	A1-2 Warm Load 4	26.80	25 ± 15	
1108	A1-2 Warm Load Center	26.74	25 ± 15	
1110	Local Oscillator Channel 7	32.04	25 ± 15	
1112	Local Oscillator Channel 8	33.89	25 ± 15	
1114	Local Oscillator Channel 15	33.82	25 ± 15	
1116	PLL LO #2 Channels 9-14	30.69	25 ± 15	
1118	PLL LO #1 Channels 9-14	36.89	25 ± 15	Pass
1120	PLLO (Reference Oscillator)**/ Not used ***	N/A		N/A
1122	Mixer I.F. Amp. Channel 3	33.67	25 ± 15	Pass
1124	Mixer I.F. Amp. Channel 4	33.89	25 ± 15	
1126	Mixer I.F. Amp. Channel 5	33.41	25 ± 15	
1128	Mixer I.F. Amp. Channel 6	31.42	25 ± 15	
1130	Mixer I.F. Amp. Channel 7	32.04	25 ± 15	
1132	Mixer I.F. Amp. Channel 8	33.89	25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14	30.85	25 ± 15	
1136	Mixer I.F. Amp. Channel 15	33.82	25 ± 15	Pass

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 30 (Sheet 2 of 2)
Cold Cal Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.3)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14	33.61	25 ± 15	Pass
1140	I.F. Amp. Channel 9	33.73	25 ± 15	
1142	I.F. Amp. Channel 10	33.75	25 ± 15	
1144	I.F. Amp. Channel 11	31.16	25 ± 15	
1146	DC/DC Converter	33.75	25 ± 15	
1148	I.F. Amp. Channel 13	31.13	25 ± 15	
1150	I.F. Amp. Channel 14	31.09	25 ± 15	
1152	I.F. Amp. Channel 12	31.07	25 ± 15	
1154	RF Shelf A1-1	32.22	25 ± 15	
1156	RF Shelf A1-2	33.01	25 ± 15	
1158	Detector Preamp Assy.	28.46	25 ± 15	
1160	Scan Motor A1-1	24.36	25 ± 15	
1162	Scan Motor A1-2	25.66	25 ± 15	
1164	Feed Horn A1-1	27.72	25 ± 15	
1166	Feed Horn A1-2	29.72	25 ± 15	
1168	R.F. Mux A1-1	30.95	25 ± 15	
1170	R.F. Mux A1-2	33.17	25 ± 15	
1172	Local Oscillator Channel 3	35.32	25 ± 15	
1174	Local Oscillator Channel 4	35.12	25 ± 15	
1176	Local Oscillator Channel 5	34.37	25 ± 15	
1178	Local Oscillator Channel 6	30.22	25 ± 15	
1180	Temp Sensor Ref Voltage Count	25331	**	Pass

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: CPT Final LPT

cp: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-15-00
Test Systems Engineer Date

[signature] 7-17-00
Customer Representative Date
(Flight Hardware Only)

[signature] 269 7-15-00
Quality Control Date

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:46:36 SCAN NUMBER 173

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 1 TO 16

NO		DATA	TEMP C	NO		DATA	TEMP C
1	SCAN MOTOR A1-1	18419	24.36	9	LO CHANNEL 5	24107	34.37
2	SCAN MOTOR A1-2	19724	25.66	10	LO CHANNEL 6	21832	30.22
3	FEEDHORN A1-1	20477	27.72	11	LO CHANNEL 7	23000	32.23
4	FEEDHORN A1-2	21536	29.74	12	LO CHANNEL 8	24333	34.53
5	RF MUX A1-1	22404	30.95	13	LO CHANNEL 15	24199	33.99
6	RF MUX A1-2	23558	33.17	14	PLLO #2 CH 9/14	15235	30.69
7	LO CHANNEL 3	24697	35.32	15	PLLO #1 CH 9/14	25474	36.89
8	LO CHANNEL 4	24761	35.12	16	PLLO REFERENCE	32767	51.27

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

MSB LSB
0 1

Para: 3.2.4.3.4.3
TDS:

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:46:45 SCAN NUMBER 174

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 17 TO 32

NO	DATA	TEMP C	NO	DATA	TEMP C
17 MIXER IF CH 3	24268	33.67	25 IF AMP CH 11/14	23710	33.61
18 MIXER IF CH 4	24272	33.89	26 IF AMP CH 9	23741	33.73
19 MIXER IF CH 5	23828	33.41	27 IF AMP CH 10	23913	33.75
20 MIXER IF CH 6	22609	31.42	28 IF AMP CH 11	22421	31.16
21 MIXER IF CH 7	22809	32.04	29 DC/DC CONVERTER	23853	33.75
22 MIXER IF CH 8	24110	33.89	30 IF AMP CH 13	22410	31.13
23 MIXER IF CH 9/14	22570	30.85	31 IF AMP CH 14	22506	31.09
24 MIXER IF CH 15	23616	33.82	32 IF AMP CH 12	22322	31.07

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

M 4

0 1

AMSU A1-33 A1.EXE;62 COLD CAL MODE P1 15-JUL-00 15:47:01 SCAN NUMBER 176

[5] DIGITAL A DATA ELEMENT 0000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 31 TO 46

NO	DATA	TEMP C	NO	DATA	TEMP C
31 IF AMP CH 14	22507	31.10	39 A1-1 WARM LOAD 4	24226	24.88
32 IF AMP CH 12	22324	31.07	40 A1-1 WARM LOAD C	24297	24.98
33 RF SHELF A1-1	22469	32.22	41 A1-2 WARM LOAD 1	25022	26.72
34 RF SHELF A1-2	23316	33.01	42 A1-2 WARM LOAD 2	25165	26.66
35 DETECTOR/PREAMP	20848	28.46	43 A1-2 WARM LOAD 3	25334	26.79
36 A1-1 WARM LOAD 1	24275	24.85	44 A1-2 WARM LOAD 4	25101	26.80
37 A1-1 WARM LOAD 2	24056	24.84	45 A1-2 WARM LOAD C	25015	26.74
38 A1-1 WARM LOAD 3	24264	24.88	THERMAL REFERENCE	25331	

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

MSB LSB

/ 0

TEST DATA SHEET 31
Digital-A Data Output Nadir Mode Synch Sequence,
Unit I.D./Serial Number and Digital-B Serial Data Verification
Sections [I], [II], and [III] (Paragraph 3.2.4.3.4.4)

Step	Element (For Ref)	Description	Recorded Value	Required Value	Pass/Fail
[I]	0001	Sync Sequence Byte 1	255	255	PASS
	0002	Sync Sequence Byte 2	255	255	
	0003	Sync Sequence Byte 3	255	255	
[II]	0004	Unit I.D. and Serial N	33	*	
[III]	0005	Digital-B Data Byte 1	16	16	
	0006	Digital-B Data Byte 2	14	14	
	0007	Digital-B Data Byte 3	0	0	
	0008	Digital-B Data Byte 4	0	0	PASS

*	AMSU A1 Identification Words (data entered in decimal system)	Binary	Decimal
	AMSU-A1 S/N 101	00000001	1
	AMSU-A1 S/N 102	00000101	5
	AMSU-A1 S/N 103	00001001	9
	AMSU-A1 S/N 104	00001101	13
	AMSU-A1 S/N 105	00010001	17
	AMSU-A1 S/N 106	00010101	21
	AMSU-A1 S/N 107	00011001	25
	AMSU-A1 S/N 108	00011101	29
	AMSU-A1 S/N 109	00100001	33

Circle Test: CPT FINAL LPT

Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ken Shaw 7/15/00
Test Systems Engineer Date

J. Gunfort 7-17-00
Customer Representative (Flight Hardware Only) Date

Judy Norway 7/15/00
Quality Control Date

TEST DATA SHEET 32
Digital-A Data Output Nadir Mode Radiometer Data Section [V] (Paragraph 3.2.4.3.4.4)

BP	A1-2 Channel-3 (50.3 GHz)				A1-1 Channel-9 (57.290344 GHz)			
	Element (For Ref)	Position*	Required**	Pass/Fail	Element (For Ref)	Position*	Required**	Pass/Fail
01	0018	16802	16,500±4000	PASS	0030	16298	16,500±4000	PASS
02	0052	16801			0064	16301		
03	0086	16806			0098	16302		
04	0120	16803			0132	16303		
05	0154	16803			0166	16297		
06	0188	16810			0200	16301		
07	0222	16810			0234	16301		
08	0256	16800			0268	16297		
09	0290	16801			0302	16298		
10	0324	16806			0336	16296		
11	0356	16809			0370	16298		
12	0392	16803			0404	16295		
13	0426	16806			0438	16298		
14	0460	16804			0472	16295		
15	0494	16802			0506	16298		
16	0528	16798			0540	16295		
17	0562	16809			0574	16302		
18	0596	16808			0608	16300		
19	0630	16803			0642	16299		
20	0664	16802			0676	16297		
21	0698	16805			0710	16301		
22	0732	16805			0744	16298		
23	0766	16812			0778	16299		
24	0800	16809			0812	16300		
25	0834	16803			0846	16301		
26	0868	16804			0880	16295		
27	0902	16800			0914	16297		
28	0936	16803			0948	16299		
29	0970	16805			0982	16302		
30	1004	16806	16,500±4000		1016	16300	16,500±4000	
CC	1038	Ø	0		1050	Ø	0	
WC	1190	Ø	0	PASS	1202	Ø	0	PASS

* Actual counts from computer printout. Rewriting counts on this data sheet is optional.
** Required = 16,500 ± 4000 counts (Unless otherwise indicated).

Circle Test: CPT FINAL LPT Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ken Shaw 7/15/00
Test Systems Engineer Date

J Ganford 7-17-00
Customer Representative Date
(Flight Hardware Only)

Judie Hervey 7/15/00
Quality Control Date

TEST DATA SHEET 33 (Sheet 1 of 2)
Nadir Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.4)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1090	A1-1 Warm Load 1	24.67	25 ± 15	PASS
1092	A1-1 Warm Load 2	26.02	25 ± 15	
1094	A1-1 Warm Load 3	27.99	25 ± 15	
1096	A1-1 Warm Load 4	30.03	25 ± 15	
1098	A1-1 Warm Load Center	31.32	25 ± 15	
1100	A1-2 Warm Load 1	33.59	25 ± 15	
1102	A1-2 Warm Load 2	35.77	25 ± 15	
1104	A1-2 Warm Load 3	35.59	25 ± 15	
1106	A1-2 Warm Load 4	34.78	25 ± 15	
1108	A1-2 Warm Load Center	30.56	25 ± 15	
1110	Local Oscillator Channel 7	32.61	25 ± 15	
1112	Local Oscillator Channel 8	35.00	25 ± 15	
1114	Local Oscillator Channel 15	34.39	25 ± 15	
1116	PLL LO #2 Channels 9-14	31.05	25 ± 15	
1118	PLL LO #1 Channels 9-14	37.28	25 ± 15	PASS
1120	PLLO (Reference Oscillator)**/ Not used ***	N/A AMSU 6 SEIT	25 ± 15	N/A AMSU 6 SEIT
1122	Mixer I.F. Amp. Channel 3	34.10	25 ± 15	PASS
1124	Mixer I.F. Amp. Channel 4	34.32	25 ± 15	
1126	Mixer I.F. Amp. Channel 5	33.82	25 ± 15	
1128	Mixer I.F. Amp. Channel 6	31.80	25 ± 15	
1130	Mixer I.F. Amp. Channel 7	32.44	25 ± 15	
1132	Mixer I.F. Amp. Channel 8	34.35	25 ± 15	
1134	Mixer I.F. Amp. Channels 9-14	31.23	25 ± 15	
1136	Mixer I.F. Amp. Channel 15	34.21	25 ± 15	PASS

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** For S/N 101 through 104.
*** For S/N 105 and up.

(Continued on Sheet 2)

TEST DATA SHEET 33 (Sheet 2 of 2)
Nadir Mode Temperature Sensors Section [VI] (Paragraph 3.2.4.3.4.4)

Thermistor Sensors		Recorded Value* (deg. C)	Required Value (deg. C)	Pass/ Fail
Element	Description			
1138	I.F. Amp. Channel 11-14	34.00	25 ± 15	PASS
1140	I.F. Amp. Channel 9	34.13	25 ± 15	
1142	I.F. Amp. Channel 10	34.13	25 ± 15	
1144	I.F. Amp. Channel 11	31.55	25 ± 15	
1146	DC/DC Converter	34.02	25 ± 15	
1148	I.F. Amp. Channel 13	31.52	25 ± 15	
1150	I.F. Amp. Channel 14	31.48	25 ± 15	
1152	I.F. Amp. Channel 12	31.46	25 ± 15	
1154	RF Shelf A1-1	32.57	25 ± 15	
1156	RF Shelf A1-2	33.41	25 ± 15	
1158	Detector Preamp Assy.	28.76	25 ± 15	
1160	Scan Motor A1-1	25.04	25 ± 15	
1162	Scan Motor A1-2	25.01	25 ± 15	
1164	Feed Horn A1-1	25.05	25 ± 15	
1166	Feed Horn A1-2	25.05	25 ± 15	
1168	R.F. Mux A1-1	25.16	25 ± 15	
1170	R.F. Mux A1-2	27.02	25 ± 15	
1172	Local Oscillator Channel 3	26.96	25 ± 15	
1174	Local Oscillator Channel 4	27.10	25 ± 15	
1176	Local Oscillator Channel 5	27.10	25 ± 15	
1178	Local Oscillator Channel 6	27.04	25 ± 15	
1180	Temp Sensor Ref Voltage Count	25331	**	PASS

* Value is from the STE printout sheets. Copying data to this sheet is optional.
** = Count of 24,552 +1765,-1308.

Circle Test: FINAL CPT LPT

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ken Shaw 7/15/00
Test Systems Engineer Date

J. Sanford 7-17-00
Customer Representative (Flight Hardware Only) Date

Judith Nervey 7/15/00
Quality Control Date

```
AMSU  A1-33 A1.EXE;62 NADIR MODE          P1 15-JUL-00 17:10:39  SCAN NUMBER    759
[ 5 ] DIGITAL A DATA  ELEMENT    5        DIGITAL B DATA BYTE 1  00010000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                                    COMMANDS
[ 9 ]  MODULE POWER =         CONNECT     ANTENNA IN COLD CAL POSIT = NO   [ 15 ]

[ 10 ] SURVIVAL HEATER POWER =      OFF   ANTENNA IN NADIR POSITION = YES [ 16 ]

[ 11 ] MODULE TOTALLY OFF =         ON    ANTENNA IN FULL SCAN MODE = NO   [ 17 ]

[ 12 ] SCANNER A1 - 1 POWER =       ON    PLL POWER =            PLLO # 1  [ 18 ]

[ 13 ] SCANNER A1 - 2 POWER =       ON    COLD CAL POSITION MSB =     ZERO [ 19 ]

[ 14 ] ANTENNA IN WARM CAL POSIT = NO     COLD CAL POSITION LSB =     ZERO [ 20 ]

         POWER [ 4 ]  ON
                      SCREEN ONLY [ 2 ]   PRINT  [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 3
```

3.24.3.4.4

TDS 31 to 33

S/O: 787920 OP: 0830

P/N: 1331720-3-TST SN: 109 FINAL CPT

TEST ENG: Ken Shaw DATE: 7/15/00

QUALITY: [signature] 7/15/00

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	SYNC SEQUENCE BYTE 1	11111111	572	NADIR SAMPLE 17 CH 8	14986
2	SYNC SEQUENCE BYTE 2	11111111	574	CH 9	16302
3	SYNC SEQUENCE BYTE 3	11111111	576	CH 10	15996
4	UNIT ID AND SERIAL NO	00100001	578	CH 11	16164
5	DIGITAL B DATA BYTE 1	00010000	580	CH 12	16586
6	DIGITAL B DATA BYTE 2	00001110	582	CH 13	16362
7	DIGITAL B DATA BYTE 3	00000000	584	CH 14	16734
8	DIGITAL B DATA BYTE 4	00000000	586	CH 15	14852
10	REFLECTOR 1 POSITION 1	2154	588	REFLECTOR 1 POSITION 18	2154
12	REFLECTOR 2 POSITION 1	1969	590	REFLECTOR 2 POSITION 18	1969
14	REFL 1 POS 1 2ND LOOK	2155	592	REFL 1 POS 18 2ND LOOK	2154
16	REFL 2 POS 1 2ND LOOK	1969	594	REFL 2 POS 18 2ND LOOK	1969
18	NADIR SAMPLE 1 CH 3	16802	596	NADIR SAMPLE 18 CH 3	16808
20	CH 4	16302	598	CH 4	16301
22	CH 5	16869	600	CH 5	16870
24	CH 6	16739	602	CH 6	16740
26	CH 7	16442	604	CH 7	16447
28	CH 8	14985	606	CH 8	14987
30	CH 9	16298	608	CH 9	16300
32	CH 10	15992	610	CH 10	16001
34	CH 11	16164	612	CH 11	16163
36	CH 12	16588	614	CH 12	16588
38	CH 13	16360	616	CH 13	16359
40	CH 14	16735	618	CH 14	16736
42	CH 15	14851	620	CH 15	14852
44	REFLECTOR 1 POSITION 2	2154	622	REFLECTOR 1 POSITION 19	2154
46	REFLECTOR 2 POSITION 2	1969	624	REFLECTOR 2 POSITION 19	1969
48	REFL 1 POS 2 2ND LOOK	2155	626	REFL 1 POS 19 2ND LOOK	2154
50	REFL 2 POS 2 2ND LOOK	1969	628	REFL 2 POS 19 2ND LOOK	1969
52	NADIR SAMPLE 2 CH 3	16801	630	NADIR SAMPLE 19 CH 3	16803
54	CH 4	16306	632	CH 4	16303
56	CH 5	16871	634	CH 5	16869
58	CH 6	16740	636	CH 6	16738
60	CH 7	16446	638	CH 7	16444
62	CH 8	14989	640	CH 8	14983
64	CH 9	16301	642	CH 9	16299
66	CH 10	15996	644	CH 10	15999
68	CH 11	16165	646	CH 11	16169
70	CH 12	16595	648	CH 12	16583
72	CH 13	16354	650	CH 13	16365
74	CH 14	16721	652	CH 14	16744
76	CH 15	14852	654	CH 15	14852
78	REFLECTOR 1 POSITION 3	2155	656	REFLECTOR 1 POSITION 20	2154
80	REFLECTOR 2 POSITION 3	1969	658	REFLECTOR 2 POSITION 20	1969
82	REFL 1 POS 3 2ND LOOK	2155	660	REFL 1 POS 20 2ND LOOK	2154
84	REFL 2 POS 3 2ND LOOK	1969	662	REFL 2 POS 20 2ND LOOK	1969
86	NADIR SAMPLE 3 CH 3	16806	664	NADIR SAMPLE 20 CH 3	16802
88	CH 4	16303	666	CH 4	16301
90	CH 5	16869	668	CH 5	16866
92	CH 6	16742	670	CH 6	16741

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	CH 7	16445	672	CH 7	16450
96	CH 8	14986	674	CH 8	14987
98	CH 9	16302	676	CH 9	16297
100	CH 10	15998	678	CH 10	16002
102	CH 11	16166	680	CH 11	16167
104	CH 12	16595	682	CH 12	16598
106	CH 13	16358	684	CH 13	16360
108	CH 14	16733	686	CH 14	16713
110	CH 15	14853	688	CH 15	14852
112	REFLECTOR 1 POSITION 4	2155	690	REFLECTOR 1 POSITION 21	2154
114	REFLECTOR 2 POSITION 4	1969	692	REFLECTOR 2 POSITION 21	1969
116	REFL 1 POS 4 2ND LOOK	2155	694	REFL 1 POS 21 2ND LOOK	2154
118	REFL 2 POS 4 2ND LOOK	1969	696	REFL 2 POS 21 2ND LOOK	1969
120	NADIR SAMPLE 4 CH 3	16803	698	NADIR SAMPLE 21 CH 3	16805
122	CH 4	16303	700	CH 4	16299
124	CH 5	16871	702	CH 5	16870
126	CH 6	16738	704	CH 6	16739
128	CH 7	16450	706	CH 7	16444
130	CH 8	14988	708	CH 8	14986
132	CH 9	16303	710	CH 9	16301
134	CH 10	15999	712	CH 10	15998
136	CH 11	16165	714	CH 11	16170
138	CH 12	16588	716	CH 12	16587
140	CH 13	16362	718	CH 13	16367
142	CH 14	16747	720	CH 14	16722
144	CH 15	14853	722	CH 15	14852
146	REFLECTOR 1 POSITION 5	2155	724	REFLECTOR 1 POSITION 22	2154
148	REFLECTOR 2 POSITION 5	1969	726	REFLECTOR 2 POSITION 22	1969
150	REFL 1 POS 5 2ND LOOK	2154	728	REFL 1 POS 22 2ND LOOK	2154
152	REFL 2 POS 5 2ND LOOK	1969	730	REFL 2 POS 22 2ND LOOK	1969
154	NADIR SAMPLE 5 CH 3	16803	732	NADIR SAMPLE 22 CH 3	16805
156	CH 4	16300	734	CH 4	16301
158	CH 5	16868	736	CH 5	16870
160	CH 6	16740	738	CH 6	16741
162	CH 7	16445	740	CH 7	16447
164	CH 8	14986	742	CH 8	14985
166	CH 9	16297	744	CH 9	16298
168	CH 10	15996	746	CH 10	16003
170	CH 11	16165	748	CH 11	16165
172	CH 12	16588	750	CH 12	16592
174	CH 13	16354	752	CH 13	16355
176	CH 14	16722	754	CH 14	16738
178	CH 15	14853	756	CH 15	14852
180	REFLECTOR 1 POSITION 6	2154	758	REFLECTOR 1 POSITION 23	2154
182	REFLECTOR 2 POSITION 6	1969	760	REFLECTOR 2 POSITION 23	1969
184	REFL 1 POS 6 2ND LOOK	2154	762	REFL 1 POS 23 2ND LOOK	2154
186	REFL 2 POS 6 2ND LOOK	1969	764	REFL 2 POS 23 2ND LOOK	1969
188	NADIR SAMPLE 6 CH 3	16810	766	NADIR SAMPLE 23 CH 3	16812
190	CH 4	16301	768	CH 4	16301
192	CH 5	16870	770	CH 5	16867

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
194	CH 6	16739	772	CH 6	16742
196	CH 7	16447	774	CH 7	16448
198	CH 8	14985	776	CH 8	14990
200	CH 9	16301	778	CH 9	16299
202	CH 10	15998	780	CH 10	15994
204	CH 11	16171	782	CH 11	16171
206	CH 12	16586	784	CH 12	16592
208	CH 13	16354	786	CH 13	16351
210	CH 14	16723	788	CH 14	16744
212	CH 15	14852	790	CH 15	14852
214	REFLECTOR 1 POSITION 7	2154	792	REFLECTOR 1 POSITION 24	2154
216	REFLECTOR 2 POSITION 7	1969	794	REFLECTOR 2 POSITION 24	1969
218	REFL 1 POS 7 2ND LOOK	2154	796	REFL 1 POS 24 2ND LOOK	2154
220	REFL 2 POS 7 2ND LOOK	1969	798	REFL 2 POS 24 2ND LOOK	1969
222	NADIR SAMPLE 7 CH 3	16810	800	NADIR SAMPLE 24 CH 3	16809
224	CH 4	16302	802	CH 4	16303
226	CH 5	16868	804	CH 5	16868
228	CH 6	16741	806	CH 6	16738
230	CH 7	16446	808	CH 7	16445
232	CH 8	14982	810	CH 8	14986
234	CH 9	16301	812	CH 9	16300
236	CH 10	15998	814	CH 10	16000
238	CH 11	16167	816	CH 11	16165
240	CH 12	16593	818	CH 12	16592
242	CH 13	16376	820	CH 13	16356
244	CH 14	16747	822	CH 14	16729
246	CH 15	14853	824	CH 15	14853
248	REFLECTOR 1 POSITION 8	2154	826	REFLECTOR 1 POSITION 25	2154
250	REFLECTOR 2 POSITION 8	1969	828	REFLECTOR 2 POSITION 25	1969
252	REFL 1 POS 8 2ND LOOK	2154	830	REFL 1 POS 25 2ND LOOK	2154
254	REFL 2 POS 8 2ND LOOK	1969	832	REFL 2 POS 25 2ND LOOK	1969
256	NADIR SAMPLE 8 CH 3	16800	834	NADIR SAMPLE 25 CH 3	16803
258	CH 4	16301	836	CH 4	16303
260	CH 5	16865	838	CH 5	16867
262	CH 6	16738	840	CH 6	16740
264	CH 7	16446	842	CH 7	16445
266	CH 8	14985	844	CH 8	14988
268	CH 9	16297	846	CH 9	16301
270	CH 10	15999	848	CH 10	16002
272	CH 11	16169	850	CH 11	16171
274	CH 12	16596	852	CH 12	16600
276	CH 13	16346	854	CH 13	16366
278	CH 14	16735	856	CH 14	16737
280	CH 15	14852	858	CH 15	14852
282	REFLECTOR 1 POSITION 9	2154	860	REFLECTOR 1 POSITION 26	2154
284	REFLECTOR 2 POSITION 9	1969	862	REFLECTOR 2 POSITION 26	1969
286	REFL 1 POS 9 2ND LOOK	2154	864	REFL 1 POS 26 2ND LOOK	2154
288	REFL 2 POS 9 2ND LOOK	1969	866	REFL 2 POS 26 2ND LOOK	1969
290	NADIR SAMPLE 9 CH 3	16801	868	NADIR SAMPLE 26 CH 3	16804
292	CH 4	16301	870	CH 4	16301

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
294	CH 5	16868	872	CH 5	16866
296	CH 6	16741	874	CH 6	16741
298	CH 7	16448	876	CH 7	16447
300	CH 8	14985	878	CH 8	14991
302	CH 9	16298	880	CH 9	16295
304	CH 10	15997	882	CH 10	15997
306	CH 11	16166	884	CH 11	16165
308	CH 12	16592	886	CH 12	16594
310	CH 13	16364	888	CH 13	16358
312	CH 14	16742	890	CH 14	16741
314	CH 15	14851	892	CH 15	14852
316	REFLECTOR 1 POSITION 10	2154	894	REFLECTOR 1 POSITION 27	2154
318	REFLECTOR 2 POSITION 10	1969	896	REFLECTOR 2 POSITION 27	1969
320	REFL 1 POS 10 2ND LOOK	2154	898	REFL 1 POS 27 2ND LOOK	2155
322	REFL 2 POS 10 2ND LOOK	1969	900	REFL 2 POS 27 2ND LOOK	1969
324	NADIR SAMPLE 10 CH 3	16806	902	NADIR SAMPLE 27 CH 3	16800
326	CH 4	16298	904	CH 4	16297
328	CH 5	16866	906	CH 5	16870
330	CH 6	16739	908	CH 6	16739
332	CH 7	16446	910	CH 7	16449
334	CH 8	14983	912	CH 8	14991
336	CH 9	16296	914	CH 9	16297
338	CH 10	16002	916	CH 10	15993
340	CH 11	16167	918	CH 11	16166
342	CH 12	16592	920	CH 12	16587
344	CH 13	16374	922	CH 13	16349
346	CH 14	16735	924	CH 14	16729
348	CH 15	14852	926	CH 15	14852
350	REFLECTOR 1 POSITION 11	2154	928	REFLECTOR 1 POSITION 28	2155
352	REFLECTOR 2 POSITION 11	1969	930	REFLECTOR 2 POSITION 28	1969
354	REFL 1 POS 11 2ND LOOK	2154	932	REFL 1 POS 28 2ND LOOK	2155
356	REFL 2 POS 11 2ND LOOK	1969	934	REFL 2 POS 28 2ND LOOK	1969
358	NADIR SAMPLE 11 CH 3	16809	936	NADIR SAMPLE 28 CH 3	16803
360	CH 4	16303	938	CH 4	16301
362	CH 5	16871	940	CH 5	16869
364	CH 6	16739	942	CH 6	16739
366	CH 7	16450	944	CH 7	16449
368	CH 8	14986	946	CH 8	14988
370	CH 9	16298	948	CH 9	16299
372	CH 10	15995	950	CH 10	15996
374	CH 11	16162	952	CH 11	16163
376	CH 12	16595	954	CH 12	16590
378	CH 13	16360	956	CH 13	16361
380	CH 14	16732	958	CH 14	16734
382	CH 15	14852	960	CH 15	14851
384	REFLECTOR 1 POSITION 12	2154	962	REFLECTOR 1 POSITION 29	2155
386	REFLECTOR 2 POSITION 12	1969	964	REFLECTOR 2 POSITION 29	1969
388	REFL 1 POS 12 2ND LOOK	2154	966	REFL 1 POS 29 2ND LOOK	2155
390	REFL 2 POS 12 2ND LOOK	1969	968	REFL 2 POS 29 2ND LOOK	1969
392	NADIR SAMPLE 12 CH 3	16803	970	NADIR SAMPLE 29 CH 3	16805

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
394	CH 4	16302	972	CH 4	16300
396	CH 5	16865	974	CH 5	16868
398	CH 6	16739	976	CH 6	16739
400	CH 7	16445	978	CH 7	16446
402	CH 8	14980	980	CH 8	14984
404	CH 9	16295	982	CH 9	16302
406	CH 10	16001	984	CH 10	15999
408	CH 11	16162	986	CH 11	16167
410	CH 12	16595	988	CH 12	16591
412	CH 13	16361	990	CH 13	16367
414	CH 14	16736	992	CH 14	16752
416	CH 15	14853	994	CH 15	14853
418	REFLECTOR 1 POSITION 13	2154	996	REFLECTOR 1 POSITION 30	2155
420	REFLECTOR 2 POSITION 13	1969	998	REFLECTOR 2 POSITION 30	1969
422	REFL 1 POS 13 2ND LOOK	2154	1000	REFL 1 POS 30 2ND LOOK	2155
424	REFL 2 POS 13 2ND LOOK	1969	1002	REFL 2 POS 30 2ND LOOK	1969
426	NADIR SAMPLE 13 CH 3	16806	1004	NADIR SAMPLE 30 CH 3	16806
428	CH 4	16300	1006	CH 4	16301
430	CH 5	16865	1008	CH 5	16870
432	CH 6	16742	1010	CH 6	16739
434	CH 7	16442	1012	CH 7	16444
436	CH 8	14986	1014	CH 8	14986
438	CH 9	16298	1016	CH 9	16300
440	CH 10	15997	1018	CH 10	15999
442	CH 11	16166	1020	CH 11	16166
444	CH 12	16593	1022	CH 12	16596
446	CH 13	16368	1024	CH 13	16360
448	CH 14	16737	1026	CH 14	16744
450	CH 15	14852	1028	CH 15	14853
452	REFLECTOR 1 POSITION 14	2154	1030	REFLECTOR 1 COLD CAL POS	0E
454	REFLECTOR 2 POSITION 14	1969	1032	REFLECTOR 2 COLD CAL POS	0E
456	REFL 1 POS 14 2ND LOOK	2154	1034	REFL 1 COLD CAL 2ND LOOK	0E
458	REFL 2 POS 14 2ND LOOK	1969	1036	REFL 2 COLD CAL 2ND LOOK	0E
460	NADIR SAMPLE 14 CH 3	16804	1038	COLD CAL DATA 1 CH 3	0
462	CH 4	16299	1040	CH 4	0
464	CH 5	16865	1042	CH 5	0
466	CH 6	16741	1044	CH 6	0
468	CH 7	16445	1046	CH 7	0
470	CH 8	14987	1048	CH 8	0
472	CH 9	16295	1050	CH 9	0
474	CH 10	16002	1052	CH 10	0
476	CH 11	16167	1054	CH 11	0
478	CH 12	16593	1056	CH 12	0
480	CH 13	16359	1058	CH 13	0
482	CH 14	16711	1060	CH 14	0
484	CH 15	14852	1062	CH 15	0
486	REFLECTOR 1 POSITION 15	2154	1064	COLD CAL DATA 2 CH 3	0
488	REFLECTOR 2 POSITION 15	1969	1066	CH 4	0
490	REFL 1 POS 15 2ND LOOK	2154	1068	CH 5	0
492	REFL 2 POS 15 2ND LOOK	1969	1070	CH 6	0

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
494	NADIR SAMPLE 15 CH 3	16802	1072	CH 7	0
496	CH 4	16298	1074	CH 8	0
498	CH 5	16867	1076	CH 9	0
500	CH 6	16741	1078	CH 10	0
502	CH 7	16445	1080	CH 11	0
504	CH 8	14986	1082	CH 12	0
506	CH 9	16298	1084	CH 13	0
508	CH 10	15998	1086	CH 14	0
510	CH 11	16169	1088	CH 15	0
512	CH 12	16585	1182	REFLECTOR 1 WARM CAL POS	0E
514	CH 13	16343	1184	REFLECTOR 2 WARM CAL POS	0E
516	CH 14	16719	1186	REFL 1 WARM CAL 2ND LOOK	0E
518	CH 15	14852	1188	REFL 2 WARM CAL 2ND LOOK	0E
520	REFLECTOR 1 POSITION 16	2154	1190	WARM CAL DATA 1 CH 3	0
522	REFLECTOR 2 POSITION 16	1969	1192	CH 4	0
524	REFL 1 POS 16 2ND LOOK	2154	1194	CH 5	0
526	REFL 2 POS 16 2ND LOOK	1969	1196	CH 6	0
528	NADIR SAMPLE 16 CH 3	16798	1198	CH 7	0
530	CH 4	16302	1200	CH 8	0
532	CH 5	16870	1202	CH 9	0
534	CH 6	16741	1204	CH 10	0
536	CH 7	16449	1206	CH 11	0
538	CH 8	14987	1208	CH 12	0
540	CH 9	16295	1210	CH 13	0
542	CH 10	15998	1212	CH 14	0
544	CH 11	16166	1214	CH 15	0
546	CH 12	16594	1216	WARM CAL DATA 2 CH 3	0
548	CH 13	16368	1218	CH 4	0
550	CH 14	16747	1220	CH 5	0
552	CH 15	14852	1222	CH 6	0
554	REFLECTOR 1 POSITION 17	2154	1224	CH 7	0
556	REFLECTOR 2 POSITION 17	1969	1226	CH 8	0
558	REFL 1 POS 17 2ND LOOK	2154	1228	CH 9	0
560	REFL 2 POS 17 2ND LOOK	1969	1230	CH 10	0
562	NADIR SAMPLE 17 CH 3	16809	1232	CH 11	0
564	CH 4	16302	1234	CH 12	0
566	CH 5	16867	1236	CH 13	0
568	CH 6	16738	1238	CH 14	0
570	CH 7	16445	1240	CH 15	0

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
1090	SCAN MOTOR A1-1	18585	24.67
1092	SCAN MOTOR A1-2	19912	26.02
1094	FEEDHORN A1-1	20620	27.99
1096	FEEDHORN A1-2	21685	30.03
1098	RF MUX A1-1	22599	31.32
1100	RF MUX A1-2	23780	33.59
1102	LOCAL OSCILLATOR CHANNEL 3	24930	35.77
1104	LOCAL OSCILLATOR CHANNEL 4	25003	35.59
1106	LOCAL OSCILLATOR CHANNEL 5	24317	34.78
1108	LOCAL OSCILLATOR CHANNEL 6	22010	30.56
1110	LOCAL OSCILLATOR CHANNEL 7	23200	32.61
1112	LOCAL OSCILLATOR CHANNEL 8	24571	35.00
1114	LOCAL OSCILLATOR CHANNEL 15	24404	34.39
1116	PLL LO #2 CHANNELS 9 THROUGH 14	15429	31.05
1118	PLL LO #1 CHANNELS 9 THROUGH 14	25671	37.28
1120	SPARE (NOT USED)	32767	51.27
1122	MIXER/IF AMPLIFIER CHANNEL 3	24493	34.10
1124	MIXER/IF AMPLIFIER CHANNEL 4	24497	34.32
1126	MIXER/IF AMPLIFIER CHANNEL 5	24038	33.82
1128	MIXER/IF AMPLIFIER CHANNEL 6	22807	31.80
1130	MIXER/IF AMPLIFIER CHANNEL 7	23016	32.44
1132	MIXER/IF AMPLIFIER CHANNEL 8	24343	34.35
1134	MIXER/IF AMPLIFIER CH 9 THRU 14	22767	31.23
1136	MIXER/IF AMPLIFIER CHANNEL 15	23820	34.21
1138	IF AMPLIFIER CHANNEL 11 THRU 14	23913	34.00
1140	IF AMPLIFIER CHANNEL 9	23945	34.13
1142	IF AMPLIFIER CHANNEL 10	24115	34.13
1144	IF AMPLIFIER CHANNEL 11	22625	31.55
1146	DC/DC CONVERTER	23996	34.02
1148	IF AMPLIFIER CHANNEL 13	22612	31.52
1150	IF AMPLIFIER CHANNEL 14	22706	31.48
1152	IF AMPLIFIER CHANNEL 12	22524	31.46
1154	RF SHELF A1-1	22650	32.57
1156	RF SHELF A1-2	23523	33.41
1158	DETECTOR/PREAMPLIFIER ASSEMBLY	21007	28.76
1160	A1-1 WARM LOAD 1	24369	25.04
1162	A1-1 WARM LOAD 2	24143	25.01
1164	A1-1 WARM LOAD 3	24354	25.05
1166	A1-1 WARM LOAD 4	24315	25.05
1168	A1-1 WARM LOAD CENTER	24385	25.16
1170	A1-2 WARM LOAD 1	25173	27.02
1172	A1-2 WARM LOAD 2	25320	26.96
1174	A1-2 WARM LOAD 3	25487	27.10
1176	A1-2 WARM LOAD 4	25252	27.10
1178	A1-2 WARM LOAD CENTER	25164	27.04
1180	TEMP SENSOR REFERENCE VOLTAGE	25331	

NADIR MODE

DESCRIPTION	STATUS	STATUS	STATUS
SCANNER A1-1 POWER	ON	ON	ON
SCANNER A1-2 POWER	ON	ON	ON
PLL POWER	PLLO # 1	PLLO # 1	PLLO # 1
ANTENNA IN WARM CAL POSITION MODE	NO	NO	NO
ANTENNA IN COLD CAL POSITION MODE	NO	NO	NO
ANTENNA IN NADIR POSITION MODE	YES	YES	YES
ANTENNA IN FULL SCAN MODE	NO	NO	NO
SURVIVAL HEATER POWER	OFF	OFF	OFF
MODULE POWER	CONNECT	CONNECT	CONNECT
COLD CAL POSITION MSB	ZERO	ZERO	ZERO
COLD CAL POSITION LSB	ZERO	ZERO	ZERO

ANALOG DATA

DESCRIPTION	VALUE	DEG C	VALUE	DEG C	VALUE	DEG C
A1-1 SCANNER MOTOR TEMPERATURE	216	25.1	216	25.1	216	25.1
A1-2 SCANNER MOTOR TEMPERATURE	217	26.2	217	26.2	217	26.2
A1-1 RF SHELF TEMPERATURE	219	28.8	219	28.8	219	28.8
A1-2 RF SHELF TEMPERATURE	221	31.5	222	32.8	222	32.8
A1-1 WARM LOAD TEMPERATURE	216	26.1	216	26.1	216	26.1
A1-2 WARM LOAD TEMPERATURE	218	29.0	218	29.0	218	29.0

DESCRIPTION	VALUE	AMPS/ VOLTS	VALUE	AMPS/ VOLTS	VALUE	AMPS/ VOLTS
A1-1 ANTENNA DRIVE MOTOR CURRENT (AVRG)	4	1.86	4	1.86	4	1.86
A1-2 ANTENNA DRIVE MOTOR CURRENT (AVRG)	4	1.86	4	1.86	4	1.86
SIGNAL PROCESSING +15 VDC	170	14.99	169	14.90	169	14.90
ANTENNA DRIVE +15 VDC	169	14.90	169	14.90	169	14.90
SIGNAL PROCESSING -15 VDC	147	-15.05	147	-15.05	147	-15.05
ANTENNA DRIVE -15 VDC	146	-15.05	146	-15.05	146	-15.05
RECEIVER AMPLIFIER +8 VDC	155	7.95	155	7.95	155	7.95
SIGNAL PROCESSOR +5 VDC	144	4.99	144	4.99	144	4.99
ANTENNA DRIVE +5 VDC	144	4.96	144	4.96	144	4.96
RECEIVER MIXER/IF +10 VDC	168	9.89	168	9.89	168	9.89
PHASE LOCK LOOP (CHANNEL 9/14) +15 VDC	168	14.99	168	14.99	168	14.99
PHASE LOCK LOOP (CHANNEL 9/14) -15 VDC	143	-15.00	143	-15.00	143	-15.00
L.O. VOLTAGE (CHANNEL 8) VDC	171	9.99	171	9.99	171	9.99
L.O. VOLTAGE (CHANNEL 7) VDC	170	9.94	170	9.94	170	9.94
L.O. VOLTAGE (CHANNEL 6) VDC	171	9.97	171	9.97	171	9.97
L.O. VOLTAGE (CHANNEL 3) VDC	171	9.98	171	9.98	171	9.98
L.O. VOLTAGE (CHANNEL 4) VDC	171	9.99	171	9.99	171	9.99
L.O. VOLTAGE (CHANNEL 5) VDC	170	9.95	170	9.95	170	9.95
PLLO # 2 LOCK DETECT	4	0.08	4	0.08	4	0.08
PLLO # 1 LOCK DETECT	219	4.38	219	4.38	219	4.38
L.O. VOLTAGE (CHANNEL 15) VDC	169	14.90	169	14.90	169	14.90

PRT TEMPERATURES

	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
VARIABLE TARGET	615	42.00	601	14.00
	616	43.00	602	15.00
	617	44.00	603	16.00
	618	45.00	604	17.00
	619	46.00	605	18.00
	620	47.00	606	19.00
	621	48.00	607	20.00
FIXED TARGET	622	49.00	608	21.00
	623	50.00	609	22.00
	624	51.00	610	23.00
	625	52.00	611	24.00
	626	53.00	612	25.00
	627	67.00	613	69.00
	628	68.00	614	70.00
BASEPLATE	629	71.00	630	72.00
	631	26.00	632	27.00

THERMOCOUPLE TEMPERATURES

	A1-1 NO.	A1-1 DEG K	A1-2 NO.	A1-2 DEG K
FIXED TARGET SHROUD	558	5.00	537	34.00
	559	6.00	538	35.00
VARIABLE TARGET SHROUD	550	7.00	524	36.00
	551	8.00	525	37.00
FIXED TARGET N2	506	57.00	502	30.00
	507	58.00	503	31.00
VARIABLE TARGET N2	516	59.00	511	32.00
	517	60.00	512	33.00
HEATER N2	514	1.00	509	38.00
	515	2.00	510	39.00
FIXED TARGET FLOW METER	508	63.00	504	61.00
VARIABLE TARGET FLOW METER	518	64.00	513	62.00
BASEPLATE HEATER N2	519	3.00	520	4.00
BASEPLATE N2	521	9.00	522	10.00
BASEPLATE FLOW METER	523	65.00		
ADJUNCT RADIATORS	575	73.00	577	74.00
	579	75.00	581	76.00

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AMSU  A1-33 A1.EXE;62 NADIR MODE          P1 15-JUL-00 17:11:15  SCAN NUMBER    763
[ 5 ] DIGITAL A DATA  ELEMENT    5        DIGITAL B DATA BYTE 1  00010000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                                    ANALOG DATA  1 TO 18

 1 A1-1 SCANR MOTOR    216    26.06 DEG C 10 ANTENNA DRIVE              15VDC  14.96
 2 A1-2 SCANR MOTOR    217    27.40 DEG C 11 SIGNAL PROCESSING         -15VDC -15.01
 3 A1-1 RF SHELF       219    29.58 DEG C 12 ANTENNA DRIVE             -15VDC -15.01
 4 A1-2 RF SHELF       222    32.90 DEG C 13 RECEIVER AMPLIFIER          8VDC   7.96
 5 A1-1 WARM LOAD      216    26.39 DEG C 14 SIGNAL PROCESSOR           5 VDC   5.00
 6 A1-2 WARM LOAD      218    29.28 DEG C 15 ANTENNA DRIVE              5 VDC   4.99
 7 ANT A1-1 DRIVE MOTOR CURRENT      1.88 16 RECEIVER MIXER/IF          10VDC   9.90
 8 ANT A1-2 DRIVE MOTOR CURRENT      1.88 17 PHASE LOCK LOOP CH9/14     15VDC  15.04
 9 SIGNAL PROCESSING      +15VDC    15.00 18 PHASE LOCK LOOP CH9/14    -15VDC -14.95
[ 21 ] UP                [ 22 ] DOWN

          POWER [ 4 ]   ON
                        SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

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AMSU  A1-33 A1.EXE;62 NADIR MODE         P1 15-JUL-00 17:11:22  SCAN NUMBER    764
[ 5 ] DIGITAL A DATA  ELEMENT    5       DIGITAL B DATA BYTE 1  00010000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                              ANALOG DATA 10 TO 27

10 ANTENNA DRIVE              15VDC  14.96 19 L.O. VOLTAGE      CH 8          10.00
11 SIGNAL PROCESSING         -15VDC -15.02 20 L.O. VOLTAGE      CH 7           9.98
12 ANTENNA DRIVE             -15VDC -15.00 21 L.O. VOLTAGE      CH 6          10.02
13 RECEIVER AMPLIFIER          8VDC   7.95 22 L.O. VOLTAGE      CH 3           9.99
14 SIGNAL PROCESSOR           5 VDC   4.99 23 L.O. VOLTAGE      CH 4          10.01
15 ANTENNA DRIVE              5 VDC   4.99 24 L.O. VOLTAGE      CH 5          10.00
16 RECEIVER MIXER/IF          10VDC   9.90 25 PLLO # 2 LOCK DETECT             0.08
17 PHASE LOCK LOOP CH9/14     15VDC  15.03 26 PLLO # 1 LOCK DETECT             4.39
18 PHASE LOCK LOOP CH9/14    -15VDC -14.95 27 L.O. VOLTAGE      CH15          14.98
[ 21 ] UP                    [ 22 ] DOWN

          POWER [ 4 ]   ON
                        SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

AMSU A1-33 A1.EXE;62 NADIR MODE P1 15-JUL-00 17:11:56 SCAN NUMBER 768

[5] DIGITAL A DATA ELEMENT 5 DIGITAL B DATA BYTE 1 00010000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA
CHANNEL 3

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16810	9	16808	17	16799	25	16802
2	16810	10	16803	18	16801	26	16801
3	16806	11	16806	19	16799	27	16802
4	16806	12	16803	20	16805	28	16800
5	16802	13	16805	21	16802	29	16803
6	16808	14	16804	22	16803	30	16805
7	16803	15	16805	23	16807	CC	0
8	16803	16	16800	24	16808	WC	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 NADIR MODE P1 15-JUL-00 17:12:16 SCAN NUMBER 771

[5] DIGITAL A DATA ELEMENT 5 DIGITAL B DATA BYTE 1 00010000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

RADIOMETRIC DATA
CHANNEL 9

BP	DATA	BP	DATA	BP	DATA	BP	DATA
1	16294	9	16297	17	16297	25	16300
2	16296	10	16297	18	16293	26	16297
3	16300	11	16297	19	16296	27	16302
4	16297	12	16300	20	16298	28	16298
5	16300	13	16295	21	16299	29	16299
6	16299	14	16298	22	16293	30	16300
7	16297	15	16298	23	16298	CC	0
8	16297	16	16298	24	16297	WC	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 NADIR MODE P1 15-JUL-00 17:12:41 SCAN NUMBER 774

[5] DIGITAL A DATA ELEMENT 5 DIGITAL B DATA BYTE 1 00010000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 1

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	2155	2154	9	2154	2154	17	2154	2154	25	2154	2155
2	2155	2154	10	2154	2154	18	2154	2154	26	2155	2155
3	2154	2154	11	2154	2154	19	2154	2154	27	2155	2154
4	2154	2154	12	2154	2154	20	2154	2154	28	2154	2154
5	2154	2154	13	2155	2155	21	2154	2154	29	2154	2154
6	2154	2154	14	2155	2154	22	2154	2154	30	2154	2154
7	2154	2154	15	2154	2154	23	2154	2154	CC	0	0
8	2154	2154	16	2154	2154	24	2154	2154	WC	0	0

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 NADIR MODE P1 15-JUL-00 17:12:49 SCAN NUMBER 775

[5] DIGITAL A DATA ELEMENT 5 DIGITAL B DATA BYTE 1 00010000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

REFLECTOR POSITIONS 2

BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2	BP	LOOK 1	LOOK 2
1	1969	1969	9	1969	1969	17	1969	1969	25	1969	1969
2	1969	1969	10	1969	1969	18	1969	1969	26	1969	1969
3	1969	1969	11	1969	1969	19	1969	1969	27	1969	1969
4	1969	1969	12	1969	1969	20	1969	1969	28	1969	1969
5	1969	1969	13	1969	1969	21	1969	1969	29	1969	1969
6	1969	1969	14	1969	1969	22	1969	1969	30	1969	1969
7	1969	1969	15	1969	1969	23	1969	1969	CC	0	0
8	1969	1969	16	1969	1969	24	1969	1969	WC	0	0

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 NADIR MODE P1 15-JUL-00 17:13:29 SCAN NUMBER 780
[5] DIGITAL A DATA ELEMENT 5 DIGITAL B DATA BYTE 1 00010000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 1 TO 16

NO		DATA	TEMP C	NO		DATA	TEMP C
1	SCAN MOTOR A1-1	18569	24.64	9	LO CHANNEL 5	24330	34.81
2	SCAN MOTOR A1-2	19894	25.99	10	LO CHANNEL 6	22021	30.58
3	FEEDHORN A1-1	20632	28.01	11	LO CHANNEL 7	23214	32.64
4	FEEDHORN A1-2	21692	30.04	12	LO CHANNEL 8	24586	35.02
5	RF MUX A1-1	22613	31.35	13	LO CHANNEL 15	24419	34.42
6	RF MUX A1-2	23798	33.63	14	PLLO #2 CH 9/14	15444	31.08
7	LO CHANNEL 3	24956	35.83	15	PLLO #1 CH 9/14	25686	37.31
8	LO CHANNEL 4	25021	35.62	16	PLLO REFERENCE	32767	51.27

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 NADIR MODE P1 15-JUL-00 17:13:35 SCAN NUMBER 781

[5] DIGITAL A DATA ELEMENT 5 DIGITAL B DATA BYTE 1 00010000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 17 TO 32

NO	DATA	TEMP C	NO	DATA	TEMP C
17 MIXER IF CH 3	24512	34.14	25 IF AMP CH 11/14	23930	34.03
18 MIXER IF CH 4	24515	34.36	26 IF AMP CH 9	23961	34.16
19 MIXER IF CH 5	24056	33.85	27 IF AMP CH 10	24131	34.17
20 MIXER IF CH 6	22820	31.82	28 IF AMP CH 11	22639	31.57
21 MIXER IF CH 7	23031	32.47	29 DC/DC CONVERTER	24010	34.05
22 MIXER IF CH 8	24360	34.38	30 IF AMP CH 13	22627	31.55
23 MIXER IF CH 9/14	22781	31.25	31 IF AMP CH 14	22721	31.51
24 MIXER IF CH 15	23835	34.24	32 IF AMP CH 12	22539	31.48

[21] UP [22] DOWN

POWER [4] ON

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT TOUCHSCREEN BUTTON 2

AMSU A1-33 A1.EXE;62 NADIR MODE P1 15-JUL-00 17:13:45 SCAN NUMBER 782
[5] DIGITAL A DATA ELEMENT 5 DIGITAL B DATA BYTE 1 00010000

[6] DIGITAL B DATA ELEMENT 00

[7] ANALOG DATA ELEMENT 00

DIGITAL A TEMPERATURES 31 TO 46

NO	DATA	TEMP C	NO	DATA	TEMP C
31 IF AMP CH 14	22723	31.51	39 A1-1 WARM LOAD 4	24322	25.07
32 IF AMP CH 12	22540	31.49	40 A1-1 WARM LOAD C	24392	25.17
33 RF SHELF A1-1	22667	32.61	41 A1-2 WARM LOAD 1	25184	27.04
34 RF SHELF A1-2	23538	33.44	42 A1-2 WARM LOAD 2	25328	26.98
35 DETECTOR/PREAMP	21018	28.78	43 A1-2 WARM LOAD 3	25495	27.11
36 A1-1 WARM LOAD 1	24373	25.05	44 A1-2 WARM LOAD 4	25265	27.13
37 A1-1 WARM LOAD 2	24151	25.03	45 A1-2 WARM LOAD C	25174	27.06
38 A1-1 WARM LOAD 3	24361	25.07	THERMAL REFERENCE	25331	

[21] UP [22] DOWN

POWER [4] ON
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT TOUCHSCREEN BUTTON 2

TEST DATA SHEET 34
Analog Telemetry Verification by Way of Connector J6 (Paragraph 3.2.4.3.5.1)

	From	Description	To	Measured (volts)	Required (volts)	Pass/Fail
03	J6-02	RF Shelf A1-1 Temp.	J1-10	4.48 V	3.5 ± 2 V	P
01	J6-03	A1-1 Scan Motor Temp.	J1-10	4.4 V	3.5 ± 2 V	P
05	J6-04	Warm Load A1-1 Temp.	J1-10	4.4 V	3.5 ± 2 V	P
04	J6-21	RF Shelf A1-2 Temp.	J1-10	4.48 V	3.5 ± 2 V	P
02	J6-22	A1-2 Scan Motor Temp.	J1-10	4.4 V	3.5 ± 2 V	P
06	J6-23	Warm Load A1-2 Temp.	J1-10	4.4 V	3.5 ± 2 V	P
25	J6-06	PLLO No. 2 Lock detect	J2-03	0.0 V	***	P
07	J6-08	A1-1 Drive Motor Curr.	J2-03	1.88 V	3.5 ± 2 V	P
10	J6-09	+15 V Antenna Drive	J2-03	3.48 V	3.5 ± 2 V	P
15	J6-10	+5 V Antenna Drive	J2-03	3.12 V	3.5 ± 2 V	P
09	J6-11	+15 V Signal Processing	J2-03	3.52 V	3.5 ± 2 V	P
14	J6-12	+5 V Signal Processing	J2-03	3.04 V	3.5 ± 2 V	P
22	J6-13	L.O. Voltage Channel 3	J2-03	3.52 V	3.5 ± 2 V	P
24	J6-14	L.O. Voltage Channel 5	J2-03	3.52 V	3.5 ± 2 V	P
20	J6-15	L.O. Voltage Channel 7	J2-03	3.52 V	3.5 ± 2 V	P
16	J6-16	+15 V PLL LO Ch 9-14	J2-03	3.52 V	3.5 ± 2 V	P
17	J6-17	*	J2-03	3.52 V	3.5 ± 2 V	P
27	J6-18	L.O. Voltage Channel 15	J2-03	3.52 V	3.5 ± 2 V	P
26	J6-25	PLLO No. 1 Lock detect	J2-03	4.48 V	***	P
08	J6-27	A1-2 Drive Motor Curr.	J2-03	1.92 V	3.5 ± 2 V	P
12	J6-28	-15 V Antenna Drive	J2-03	3.16 V	3.5 ± 2 V	P
11	J6-29	-15 V Signal Processing	J2-03	3.04 V	3.5 ± 2 V	P
23	J6-30	L.O. Voltage Channel 4	J2-03	3.48 V	3.5 ± 2 V	P
21	J6-31	L.O. Voltage Channel 6	J2-03	3.56 V	3.5 ± 2 V	P
19	J6-32	L.O. Voltage Channel 8	J2-03	3.56 V	3.5 ± 2 V	P
18	J6-33	-15 V PLL LO Ch 9-14	J2-03	2.96 V	3.5 ± 2 V	P
13	J6-34	**	J2-03	3.24 V	3.5 ± 2 V	P

* +8.5 V PLL LO Ch 9-14 for S/N 101-104, +10V Mixer Amp for S/N 105 and above.
** +8 V Receiver for S/N 101-104, +8 V IF Amp for S/N 105 and above.
*** 4.5 ±0.5 when locked, 0.5 ±0.5 when unlocked or OFF. One must be locked.

Circle Test: CPT Final LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ray Hufberg 7-15-00
Test Systems Engineer Date

J. Sanford 7-17-00
Customer Representative Date
(Flight Hardware Only)

Judie Oberbey 7-15-00
Quality Control Date

TEST DATA SHEET 35 (Sheet 1 of 2)
Analog Telemetry Signals by Way of the STE (Paragraph 3.2.4.3.5.2)

	Description	(*)	Measured (Deg. C)	Required (Deg. C)	Pass/Fail
01	A1-1 Scanner Motor	Temp	26.19	25 ± 15	P
02	A1-2 Scanner Motor	Temp	27.64	25 ± 15	P
03	A1-1 RF Shelf	Temp	29.86	25 ± 15	P
04	A1-2 RF Shelf	Temp	32.41	25 ± 15	P
05	A1-1 Warm Load	Temp	26.47	25 ± 15	P
06	A1-2 Warm Load	Temp	29.65	25 ± 15	P
			(mAmps)	(mAmps)	
07	Ant A1-1 Drv Motor Current		40.93	125 mA (Max)	P
08	Ant A1-2 Drv Motor Current		40.14	125 mA (Max)	P

(*) Data from the printout sheet. Rewriting data on this space is optional.

(Continued on sheet 2)

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ray Kirkberg 7-15-00
Test Systems Engineer Date

J. Sanford 7-17-00
Customer Representative (Flight Hardware Only) Date

Judie Hervey 7-15-00
Quality Control Date

TEST DATA SHEET 35 (Sheet 2 of 2)
Analog Telemetry Signals by Way of the STE (Paragraph 3.2.4.3.5.2)

	Description	(*)	Measured (volts)	Required (volts)	Pass/ Fail
09	Signal Processing	+15 V	+ 14.99	15.0 ± 0.5 V	P
10	Antenna Drive	+15 V	+ 15.13	15.0 ± 0.5 V	P
11	Signal Processing	-15 V	+ 15.01	-15.0 ± 0.5 V	P
12	Antenna Drive	-15 V	- 14.91	-15.0 ± 0.5 V	P
13	Receiver	+8 V	+ 7.96	8.0 ± 0.5 V	P
14	Sig Processing	+5 V	+ 5.00	5.0 ± 0.5 V	P
15	Antenna Drive	+5 V	+ 5.05	5.0 ± 0.5 V	P
16	Phase Lock Loop Ch 9-14 (a)/	+8.5 V	N/A	8.5 ± 0.5 V	N/A
	Receiver/Mixer IF (b)	+10 V	+ 9.89	10.0 ±0.5 V	P
17	Phase Lock Loop Ch 9-14	+15 V	+ 15.02	15.0 ± 0.5 V	P
18	Phase Lock Loop Ch 9-14	-15 V	- 14.97	-15.0 ± 0.5 V	P
19	L.O. #8	Ch-8	+ 10.00	(**)__ ± 0.5 V	P
20	L.O. #7	Ch-7	+ 10.00	(**)__ ± 0.5 V	P
21	L.O. #6	Ch-6	+ 9.99	(**)__ ± 0.5 V	P
22	L.O. #3	Ch-3	+ 9.98	(**)__ ± 0.5 V	P
23	L.O. #4	Ch-4	+ 10.00	(**)__ ± 0.5 V	P
24	L.O. #5	Ch-5	+ 9.98	(**)__ ± 0.5 V	P
25	PLLO No. 2 Lock Detect		+ 0.08	(***)	P
26	PLLO No. 1 Lock Detect		+ 4.39	(***)	P
27	L.O. #15	Ch-15	+ 14.97	(**)__ ± 0.5 V	P

(*) Data from the printout sheet. Rewriting data on this space is optional.
(**) GDO voltages from the manufacturer data sheet for S/N 101-104; DRO CH3-8 10V, GDO CH15 15V for S/N 105 and above.
(***) Locked PLO voltage 0 to +15 V, other PLO voltage ±15.0 V; one must be locked for S/N 101-104. Locked PLO voltage 4.0 ±1.0 V, other PLO voltage 0.0 ±0.2 V, one must be locked for S/N 105 and above.
(a) For S/N 101 through 104. (b) For S/N 105 and up.

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Kay Herzberg 7-15-00
Test Systems Engineer Date

Joseph Sanford 7-17-00
Customer Representative Date
(Flight Hardware Only)

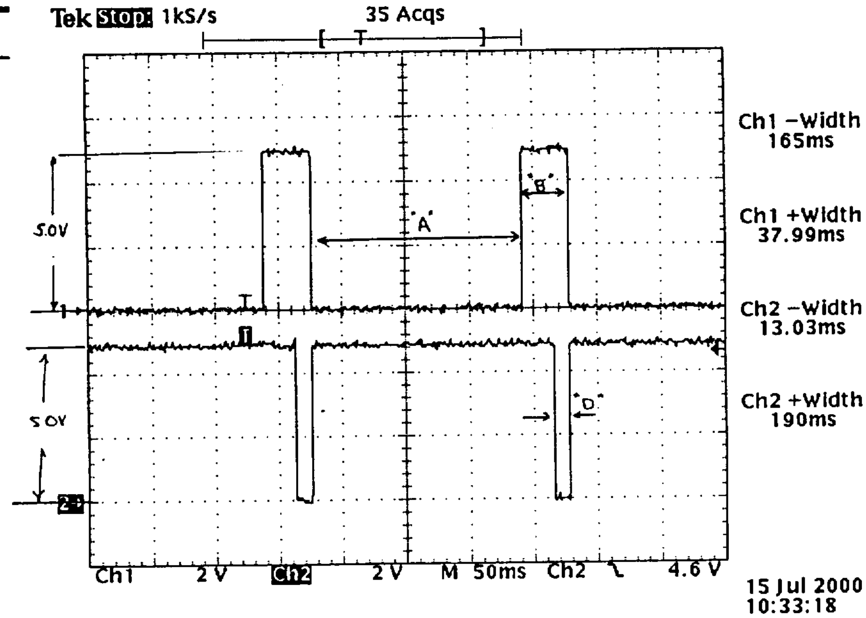
[signature] 280 7-15-00
Quality Control Date

```
AMSU  A1-33 A1.EXE;62 FULL SCAN MODE     P1 15-JUL-00 17:03:50  SCAN NUMBER   709
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                                    ANALOG DATA  1 TO 18

 1 A1-1 SCANR MOTOR    216    26.19 DEG C 10 ANTENNA DRIVE            15VDC  15.13
 2 A1-2 SCANR MOTOR    218    27.64 DEG C 11 SIGNAL PROCESSING       -15VDC -15.01
 3 A1-1 RF SHELF       219    29.86 DEG C 12 ANTENNA DRIVE           -15VDC -14.91
 4 A1-2 RF SHELF       221    32.41 DEG C 13 RECEIVER AMPLIFIER        8VDC   7.96
 5 A1-1 WARM LOAD      216    26.47 DEG C 14 SIGNAL PROCESSOR         5 VDC   5.00
 6 A1-2 WARM LOAD      218    29.65 DEG C 15 ANTENNA DRIVE            5 VDC   5.05
 7 ANT A1-1 DRIVE MOTOR CURRENT   40.93 16 RECEIVER MIXER/IF         10VDC   9.89
 8 ANT A1-2 DRIVE MOTOR CURRENT   40.14 17 PHASE LOCK LOOP CH9/14    15VDC  15.02
 9 SIGNAL PROCESSING       +15VDC 14.99 18 PHASE LOCK LOOP CH9/14   -15VDC -14.97
[ 21 ] UP                  [ 22 ] DOWN

          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

```
AMSU  A1-33 A1.EXE;62 FULL SCAN MODE     P1 15-JUL-00 17:03:58  SCAN NUMBER   709
[ 5 ] DIGITAL A DATA  ELEMENT 0000

[ 6 ] DIGITAL B DATA  ELEMENT   00

[ 7 ] ANALOG DATA     ELEMENT   00

                              ANALOG DATA 10 TO 27

10 ANTENNA DRIVE              15VDC  15.06 19 L.O. VOLTAGE      CH 8          10.00
11 SIGNAL PROCESSING         -15VDC -15.01 20 L.O. VOLTAGE      CH 7          10.00
12 ANTENNA DRIVE             -15VDC -14.94 21 L.O. VOLTAGE      CH 6           9.99
13 RECEIVER AMPLIFIER          8VDC   7.97 22 L.O. VOLTAGE      CH 3           9.98
14 SIGNAL PROCESSOR          5 VDC    5.00 23 L.O. VOLTAGE      CH 4          10.00
15 ANTENNA DRIVE             5 VDC    5.03 24 L.O. VOLTAGE      CH 5           9.98
16 RECEIVER MIXER/IF         10VDC    9.91 25 PLLO # 2 LOCK DETECT             0.08
17 PHASE LOCK LOOP CH9/14    15VDC   15.01 26 PLLO # 1 LOCK DETECT             4.39
18 PHASE LOCK LOOP CH9/14   -15VDC  -14.96 27 L.O. VOLTAGE      CH15          14.97
[ 21 ] UP                   [ 22 ] DOWN

          POWER [ 4 ]  ON
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL       [ 1 ] RETURN
 SELECT TOUCHSCREEN BUTTON 2
```

TEST DATA SHEET 36

Integrate/Hold and Dump Signal Verification (Paragraph 3.2.4.3.6.1)



3.2.4.3.6.1
S/O: 787920 OP: 0830 TDS 36 TEST ENG: [signature] DATE: 7-15-00
P/N: 1331720-3-TST SN: 109 FINAL CPT QUALITY: [signature] 7-15-00

Parameter	Measured	Required	Pass/ Fail
Scope Channel-1: Integration/Hold			
Time Measured (A)*	165.0 ms	165 ms ± 10%	PASS
Time Measured (B)*	37.99 ms	35 ms ± 10%	PASS
Amplitude Measured	5.0 V	5.0 ± 0.2 V	PASS
Scope Channel-2: Dump Signal			
Time Measured (D)*	13.03 ms	9 ms to 15 ms	PASS
Amplitude Measured	5.0 V	5.0 ± 0.2 V	PASS

* Refer to ~~Figure~~ 2 for waveform configuration.

Circle Test: FINAL CPT LPT

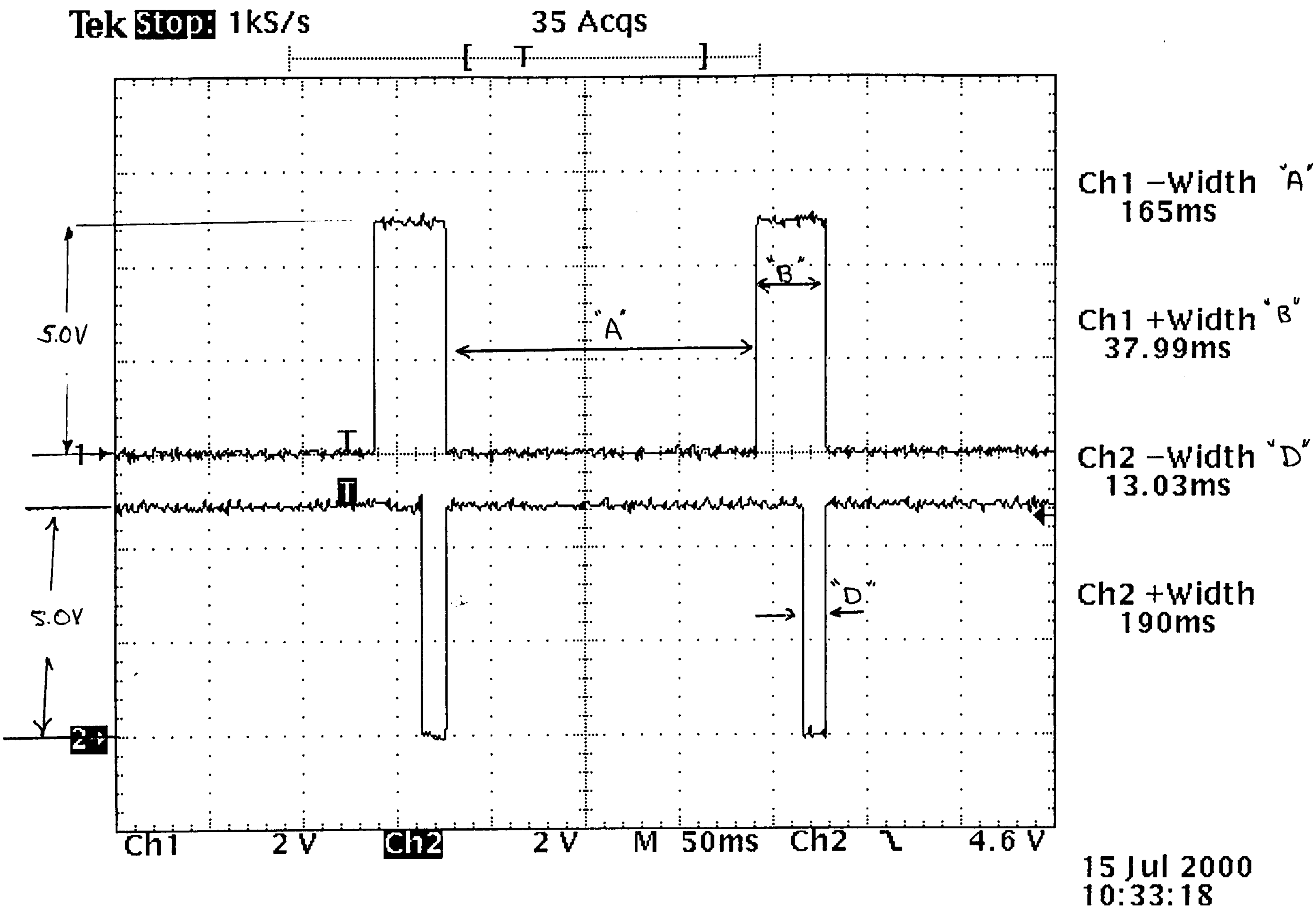
OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 7-15-00 Date

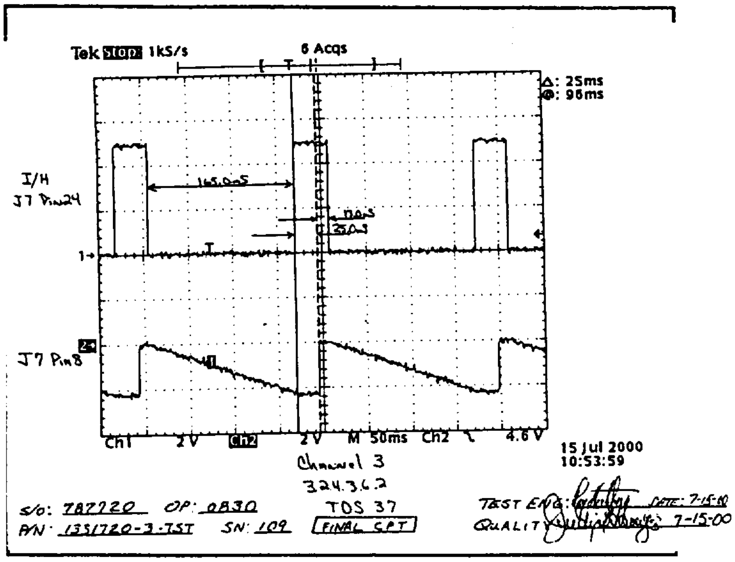


3.2.4.3.6.1

S/O: 787920 OP: 0830 TDS36 TEST ENG: [signature] DATE: 7-15-00

P/N: 131720-3-TST SN: 109 FINAL CPT QUALITY: [signature] DATE: 7-15-00

TEST DATA SHEET 37
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

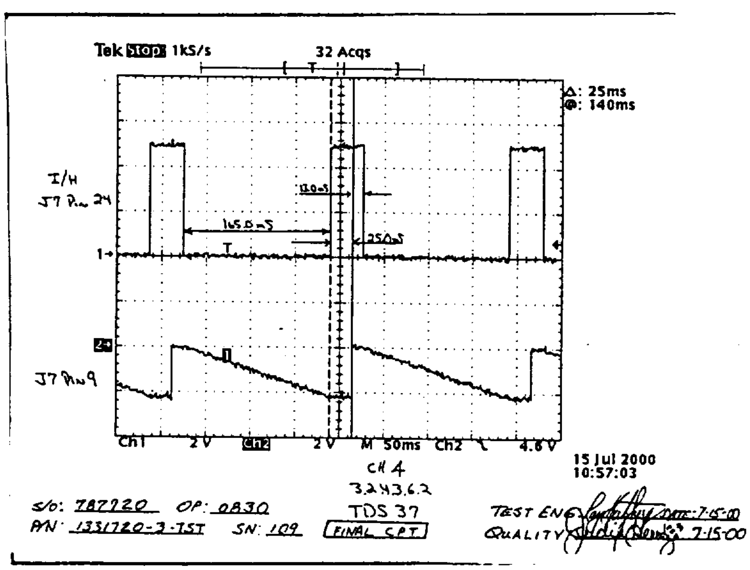


Channel _______03
Frequency: ___________50.3 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS



Channel _______04
Frequency: ___________52.8 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS

* Refer to Figure 2 for waveform configuration.

Circle Test: Final CPT LPT

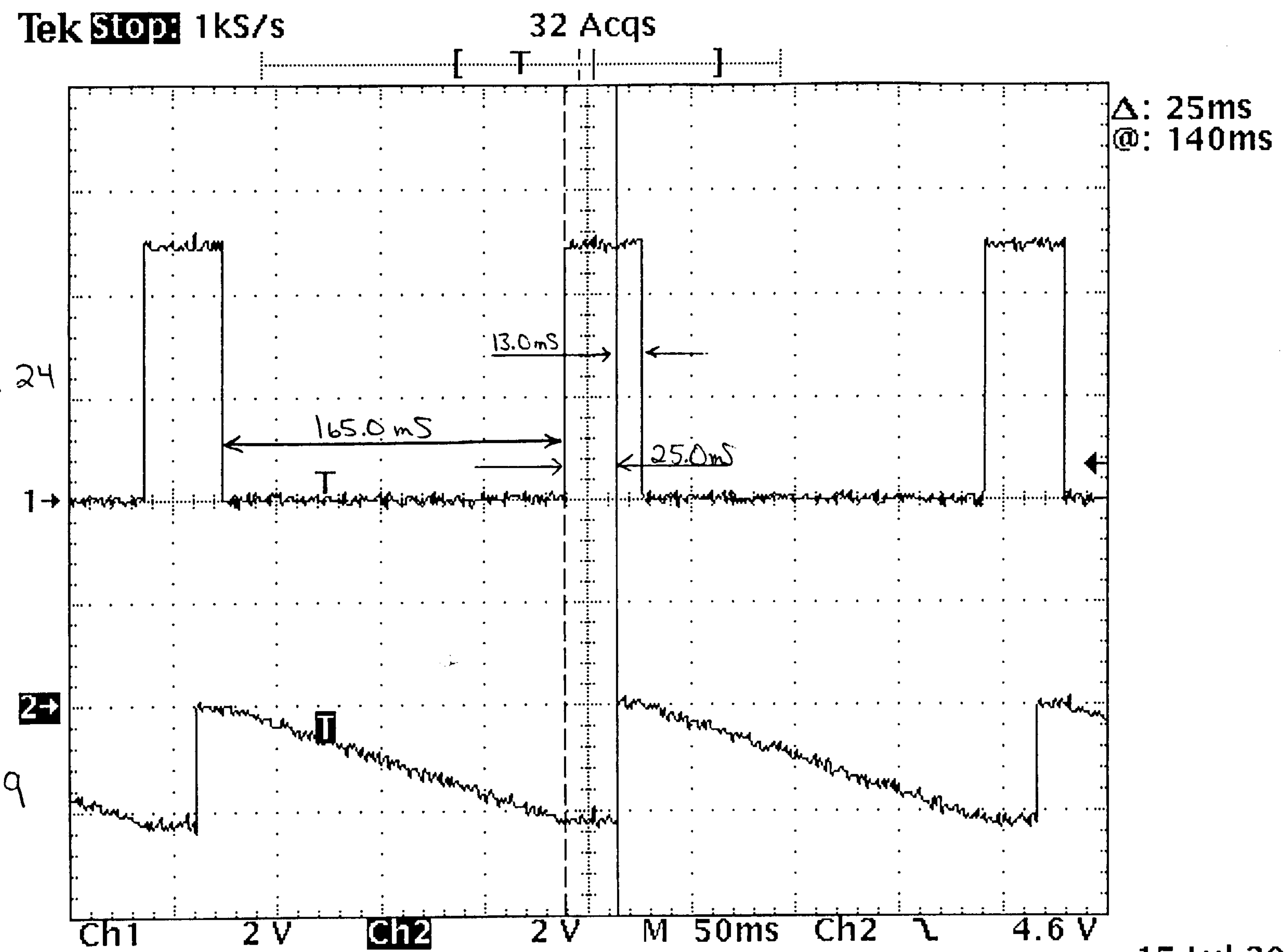
OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 269 07-15-00 Date

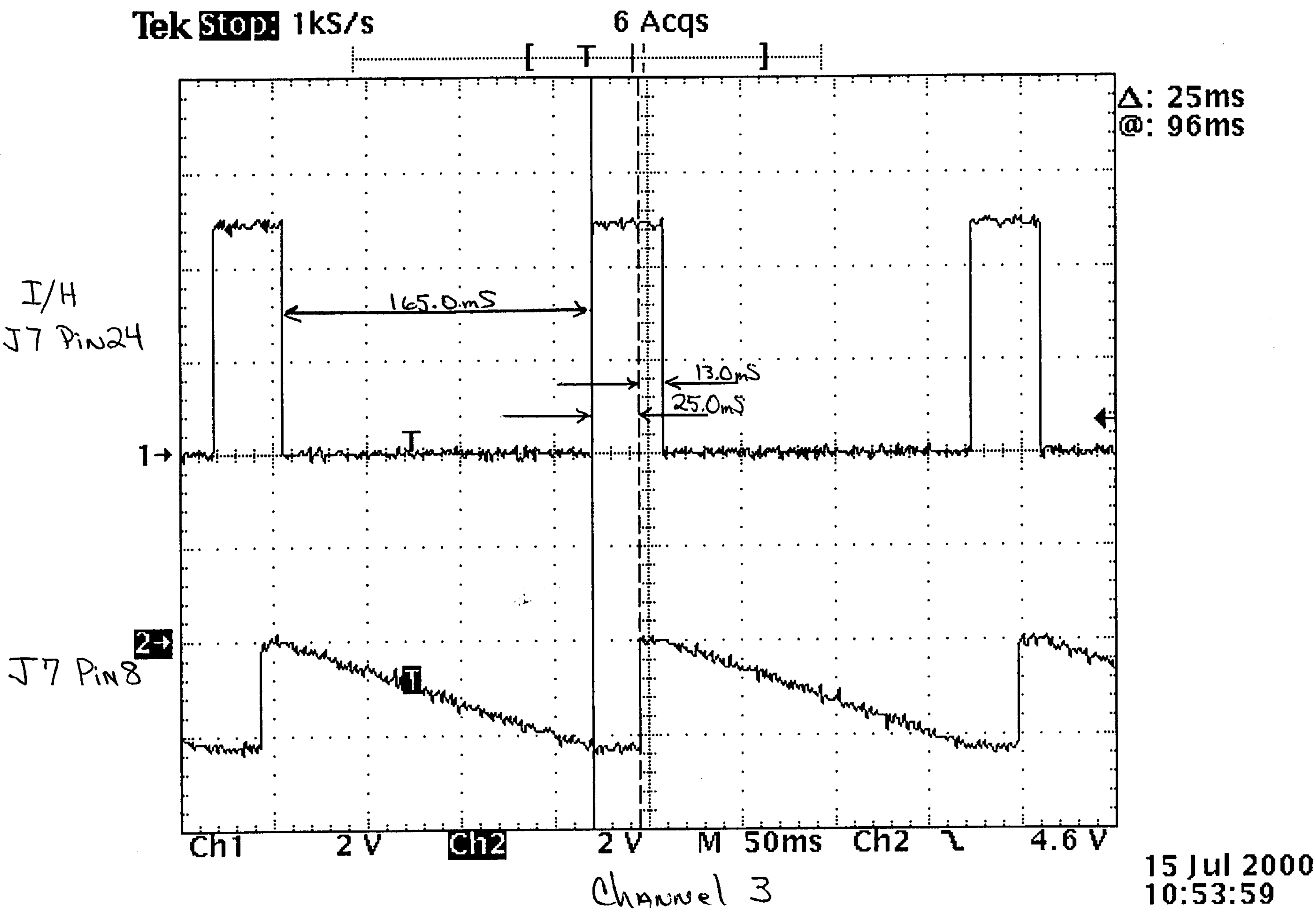


15 Jul 2000
10:57:03

CH 4
3.2.4.3.6.2

S/O: 787920 OP: 0830 TDS 37
P/N: 133720-3-TST SN: 109 FINAL CPT

TEST ENG. DATE: 7-15-00
QUALITY 7-15-00



Channel 3

3.2.4.3.6.2

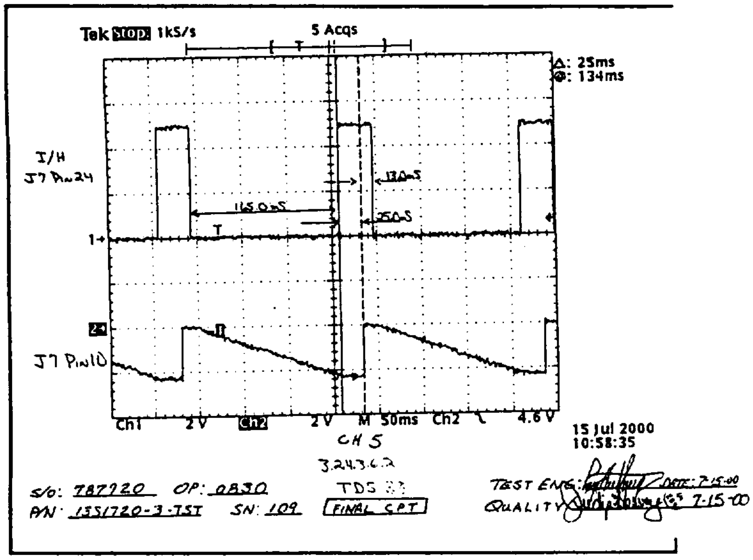
S/O: 787920 OP: 0830 TDS 37

P/N: 131720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY: [signature] 7-15-00

TEST DATA SHEET 38
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

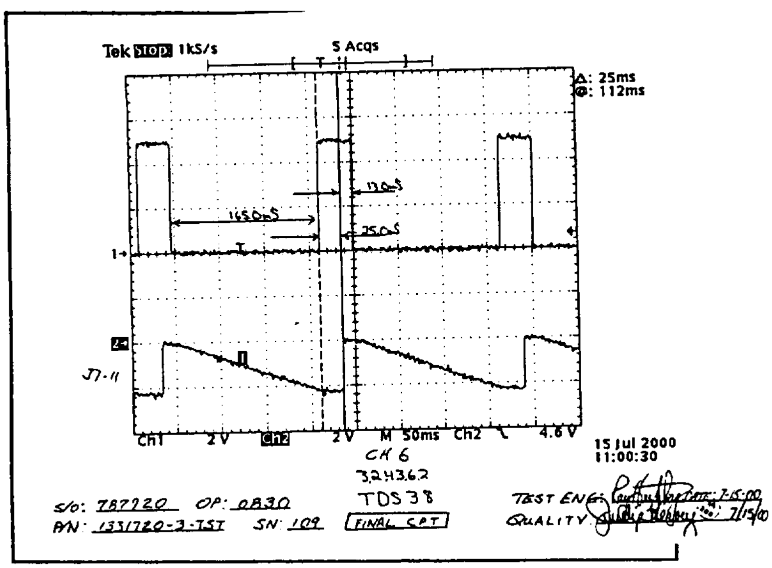


Channel 05
Frequency: 53.596 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS



Channel 06
Frequency: 54.4 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS

* Refer to Figure 2 for waveform configuration.

Circle Test: Final CPT LPT

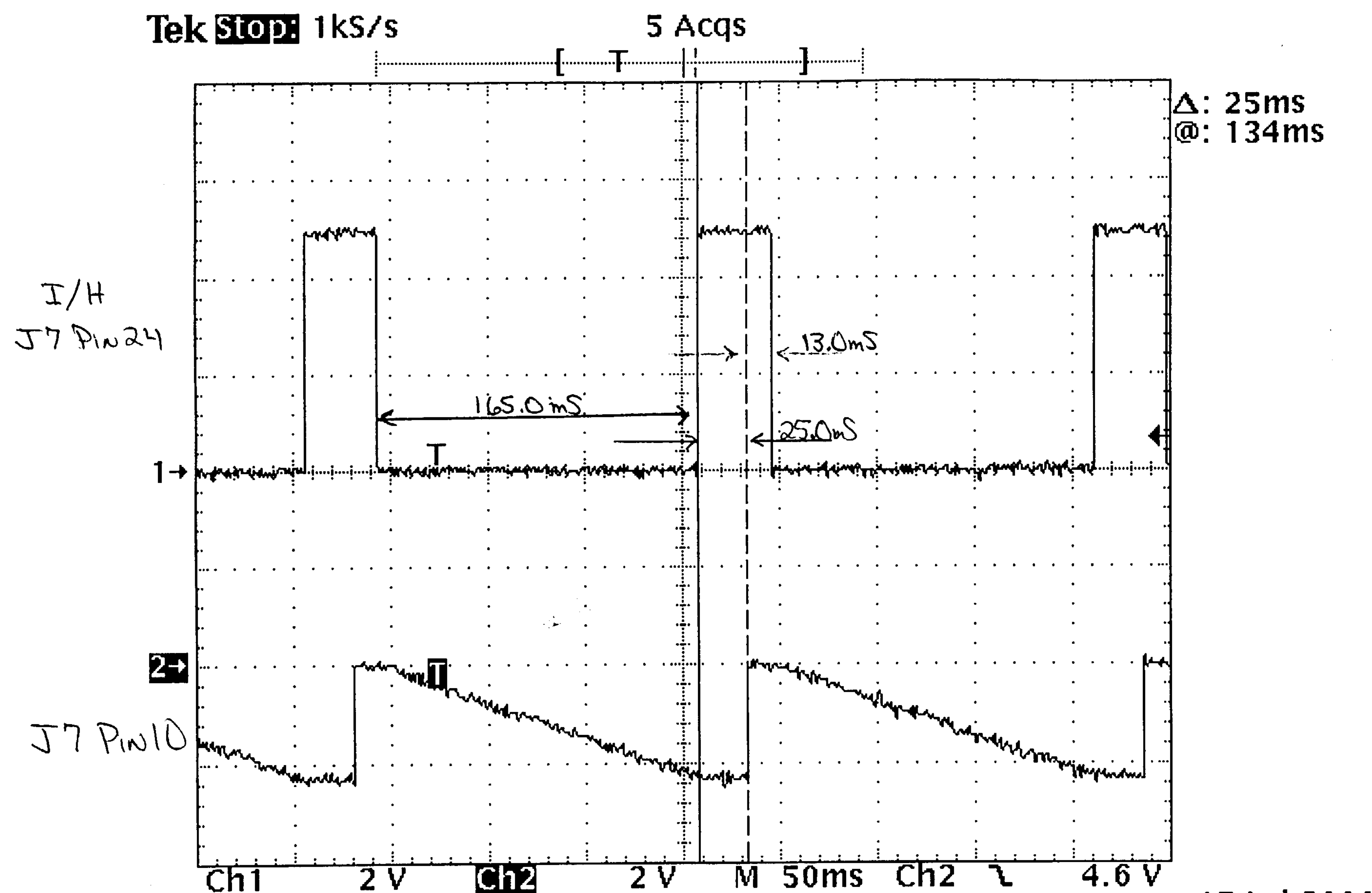
Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N 109

Test Systems Engineer 7-15-00 Date

Customer Representative 7-15-00 Date
(Flight Hardware Only)

Quality Control 7-15-00 Date



CH 5

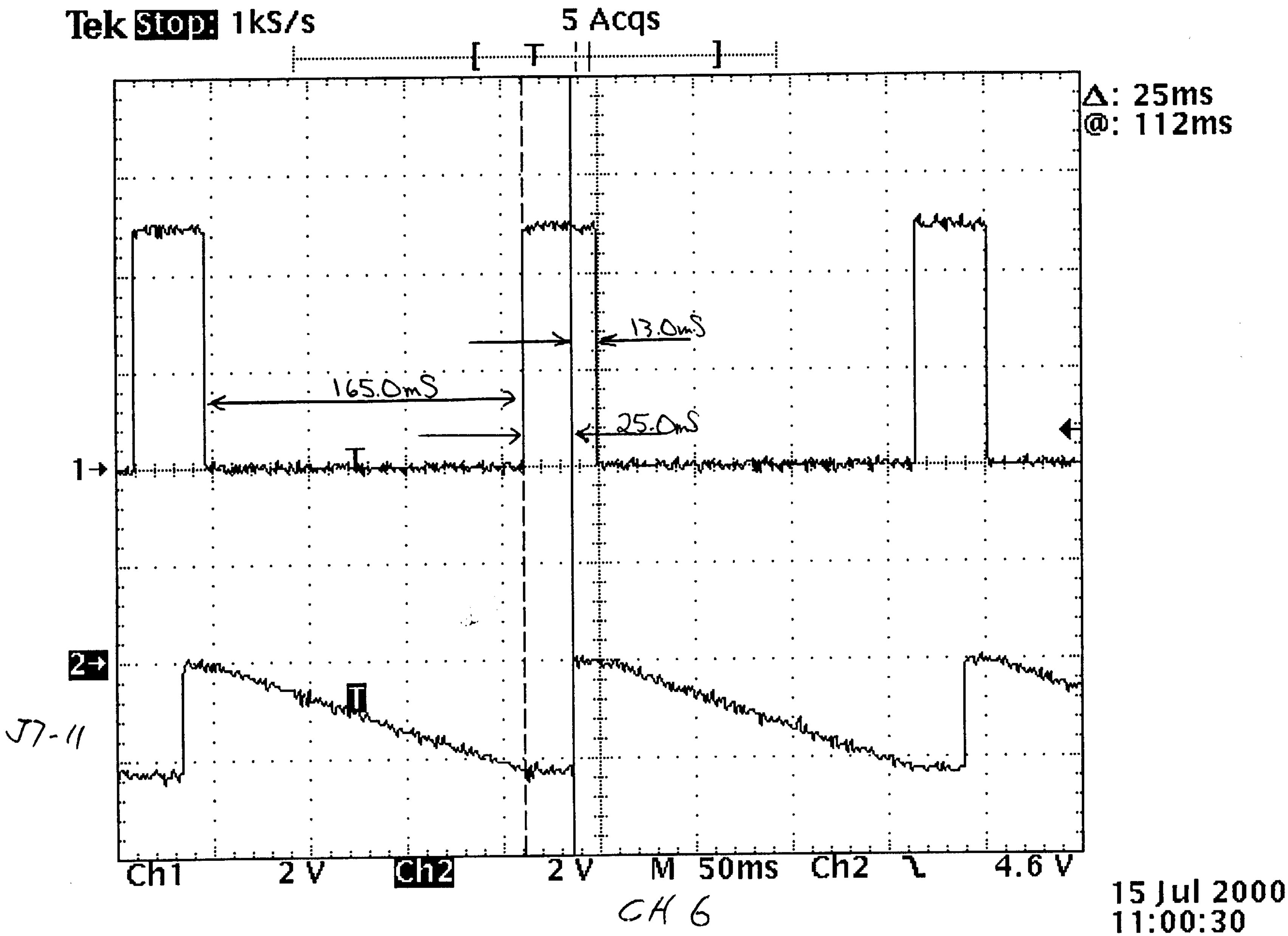
3.2.4.3.C.D

S/O: 787920 OP: 0830 TDS

P/N: 133720-3-TST SN: 109 FINAL CPT

TEST ENG: DATE: 7-15-00

QUALITY 7-15-00



CH 6

3,2,4,3,6,2

TDS 38

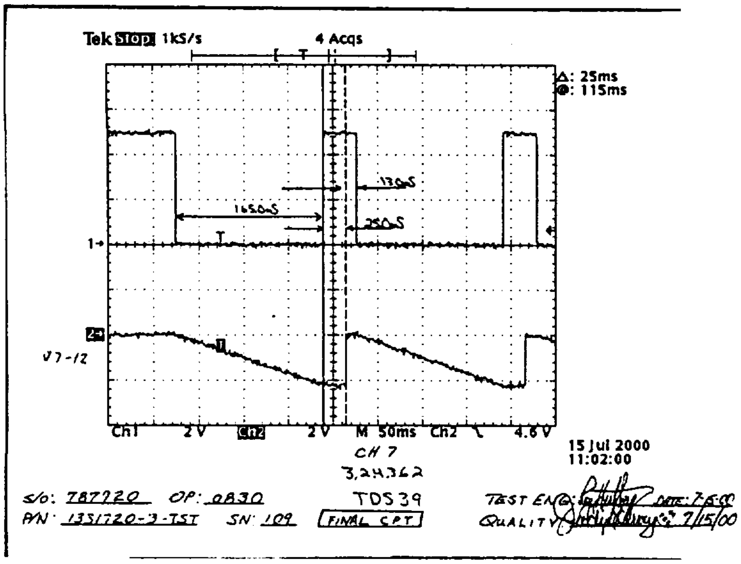
S/O: 787920 OP: 0830

P/N: 13?1720-3-TST SN: 109 [FINAL CPT]

TEST ENG: DATE: 7-15-00

QUALITY 7/15/00

TEST DATA SHEET 39
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

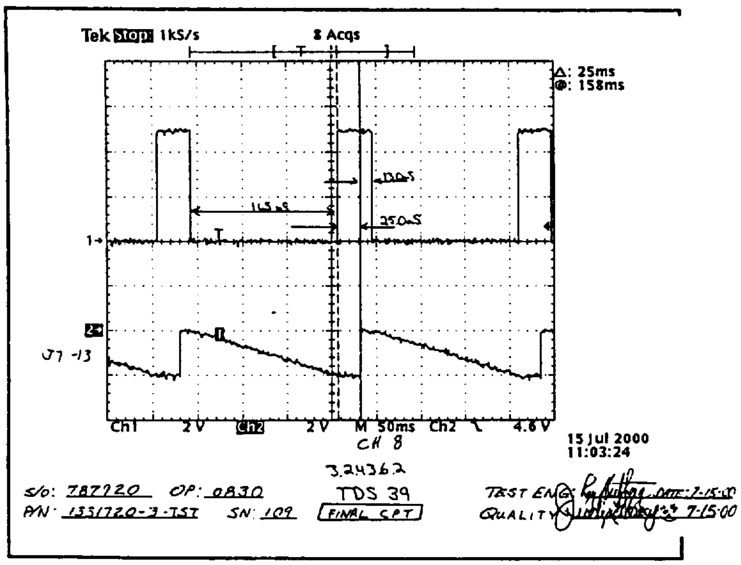


Channel 07
Frequency: 54.94 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS



Channel 08
Frequency: 55.5 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS

* Refer to Figure 2 for waveform configuration.

Circle Test: Final CPT LPT

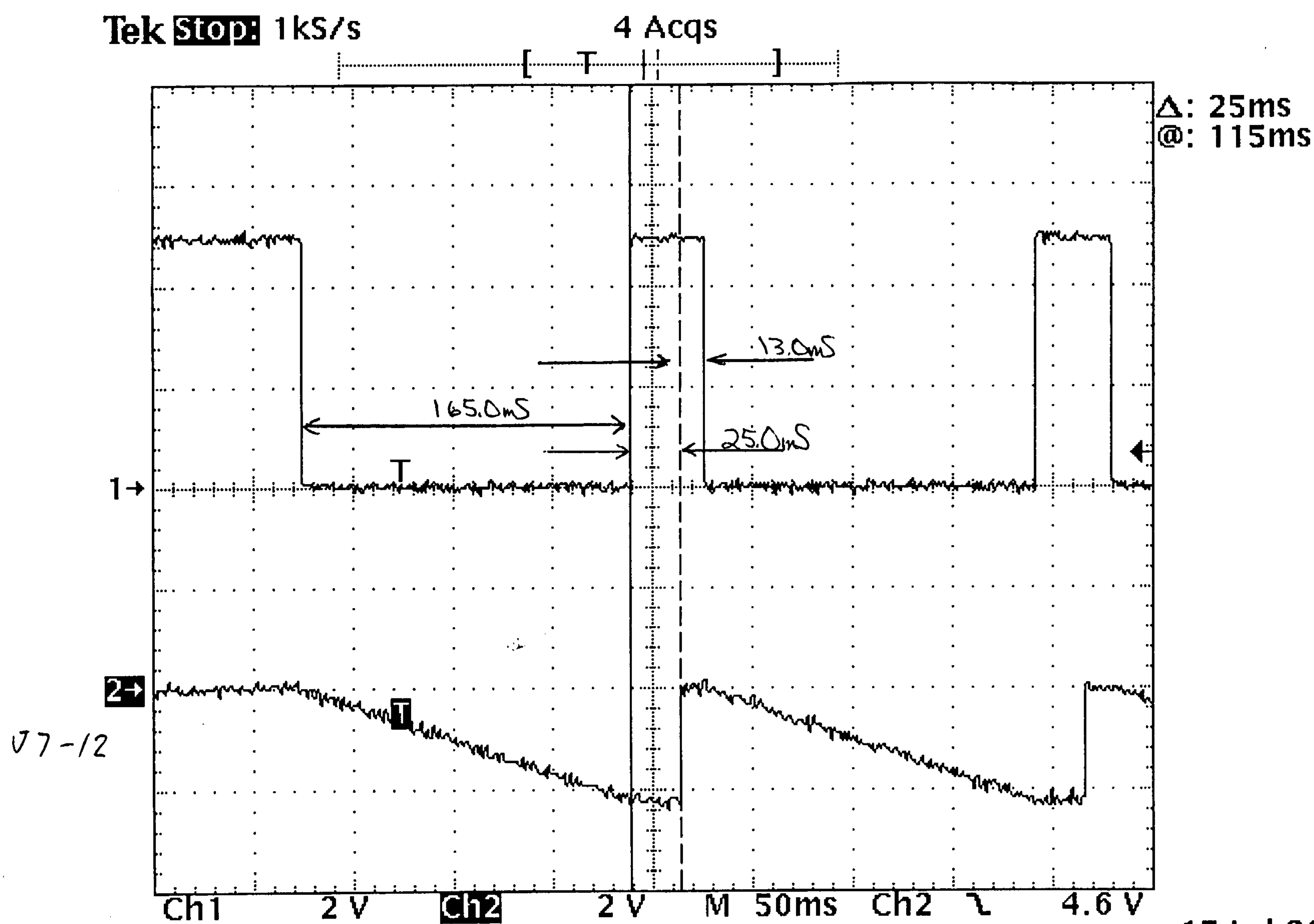
Op 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Raymond L. Hathaway 7-15-00
Test Systems Engineer Date

J. Sanford 7-15-00
Customer Representative Date
(Flight Hardware Only)

Judia Nervey 7-15-00
Quality Control Date



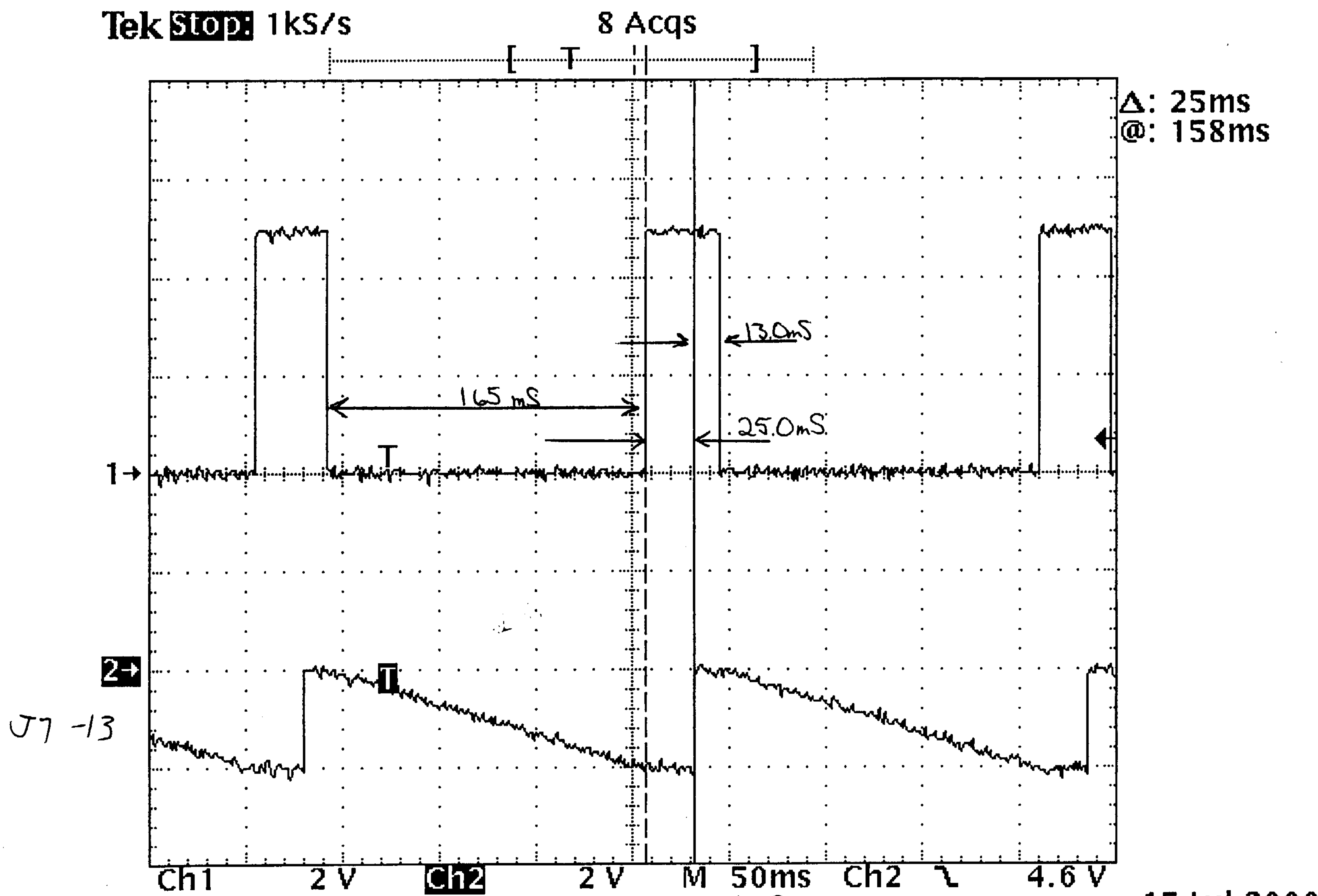
15 Jul 2000
11:02:00

CH 7
3,24,362

TDS39

S/O: 787920   OP: 0830
P/N: 133I720-3-TST   SN: 109   FINAL CPT

TEST ENG: DATE: 7-15-00
QUALITY 7/15/00



15 Jul 2000
11:03:24

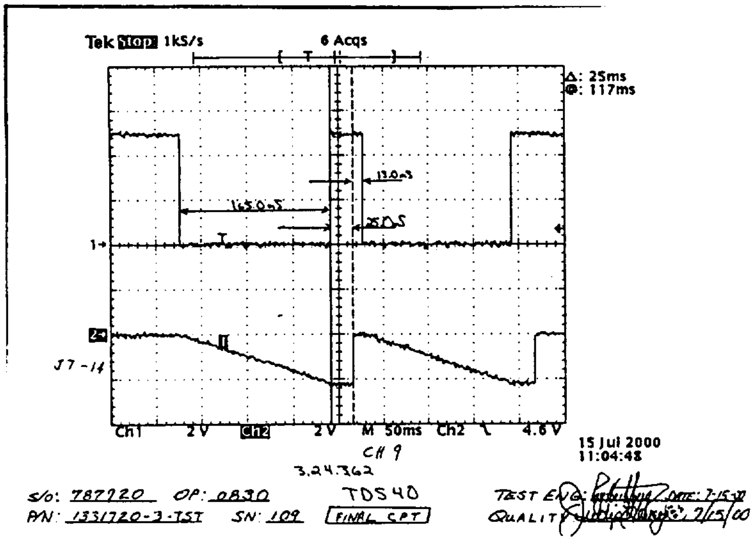
3,2,4,3,6,2

S/O: 787920 OP: 0830 TDS 39 TEST ENG: DATE: 7-15-00

P/N: 133720-3-TST SN: 109 FINAL CPT QUALITY 7-15-00

TEST DATA SHEET 40

Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

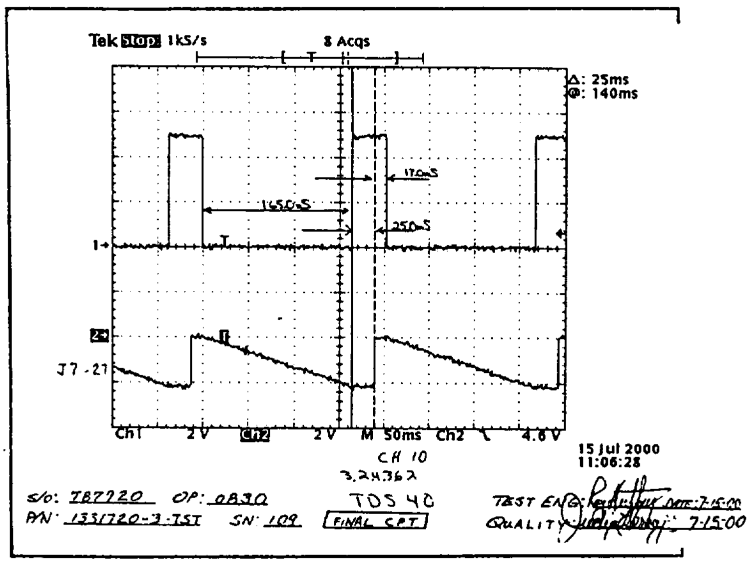


Channel 09
Frequency: 57.2903 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS



Channel 10
Frequency: 57.2903 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS

* Refer to Figure 2 for waveform configuration.

Circle Test: Final CPT LPT

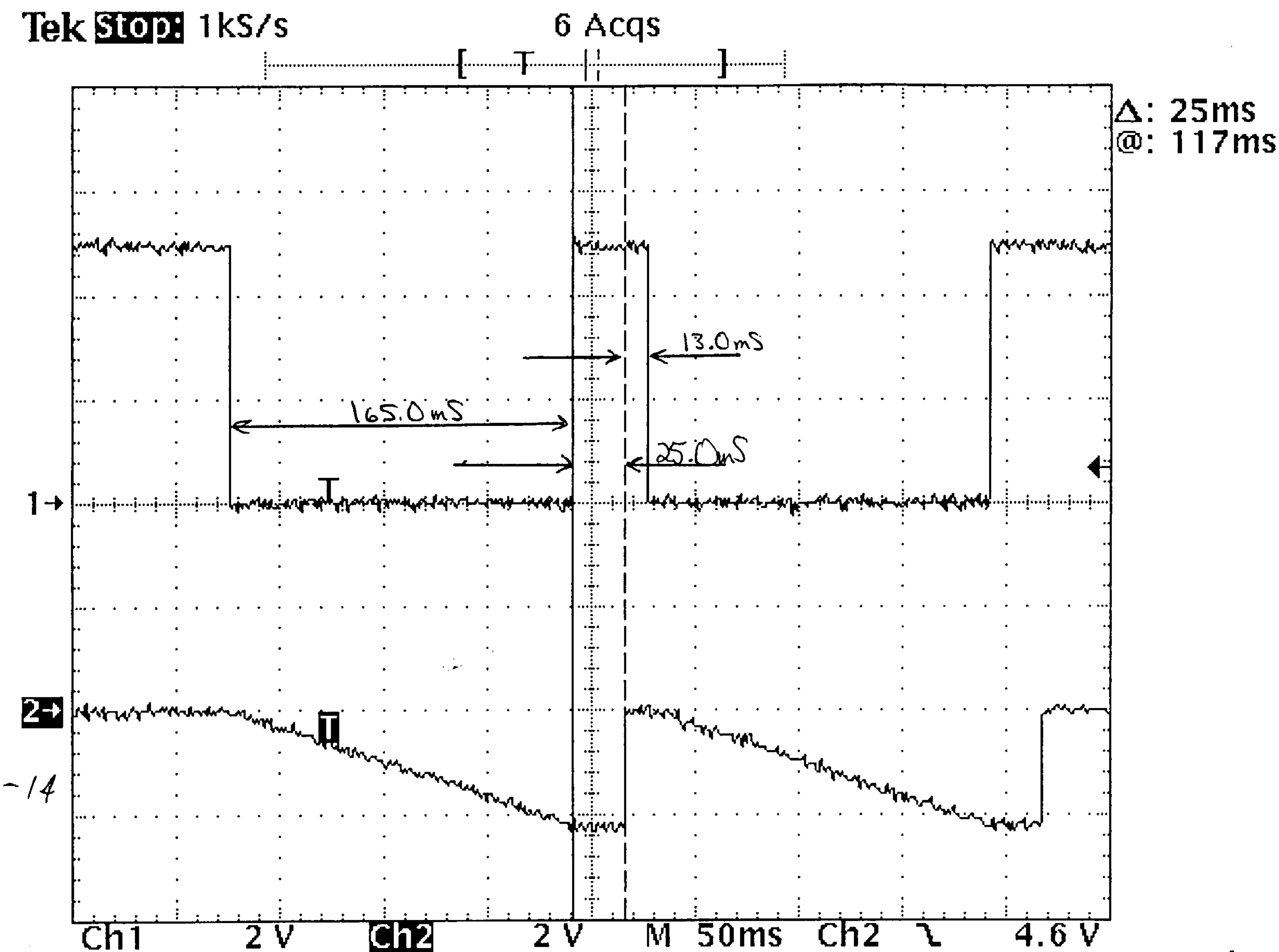
Op 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 78792C S/N 109

Ray Herzberg 7-15-00
Test Systems Engineer Date

7-15-00
Customer Representative Date
(Flight Hardware Only)

259 7-15-00
Quality Control Date



15 Jul 2000
11:04:48

CH 9

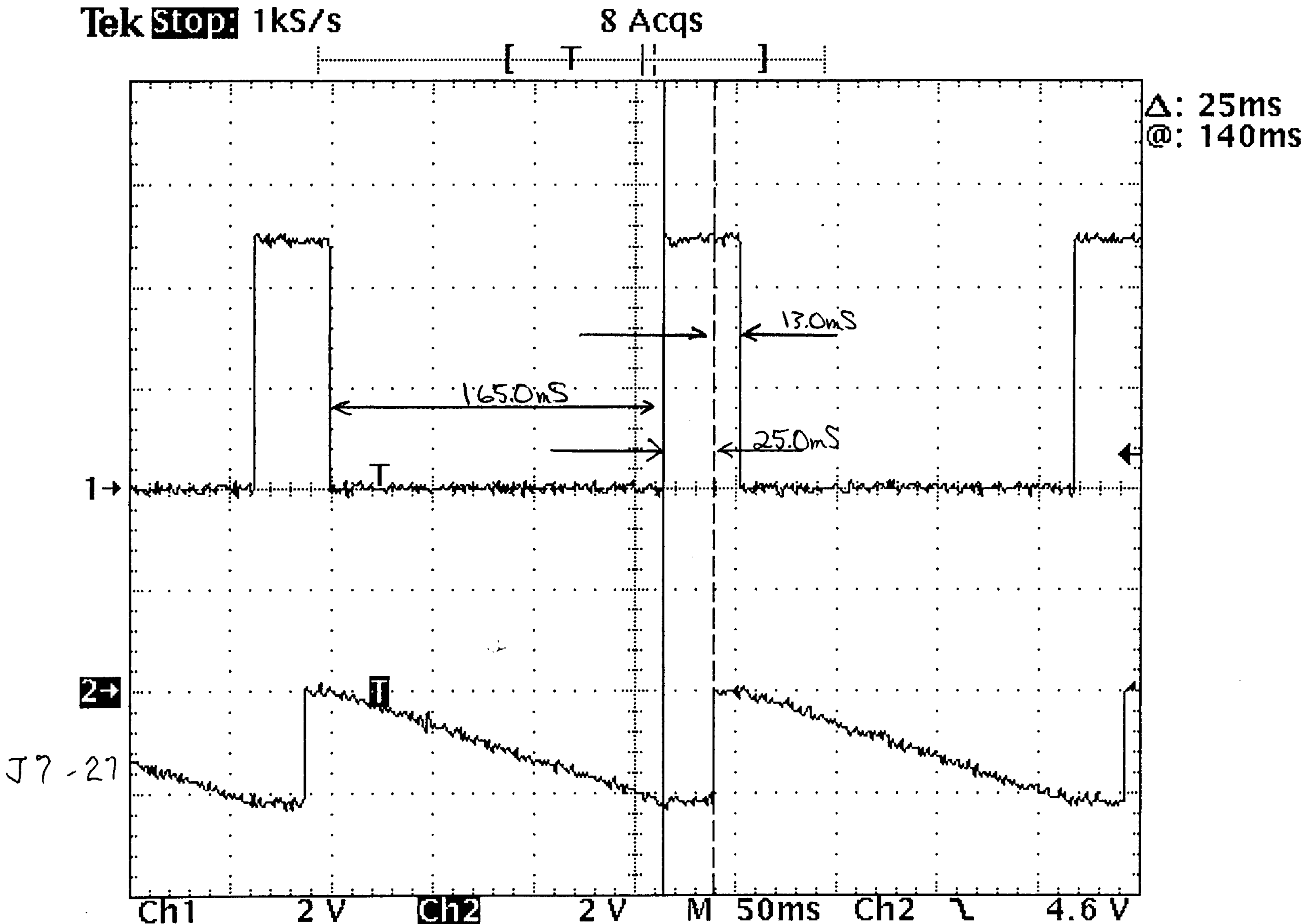
3,24,362

S/O: 787920 OP: 0830 TDS40

P/N: 1331720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY: [signature] 7/15/00

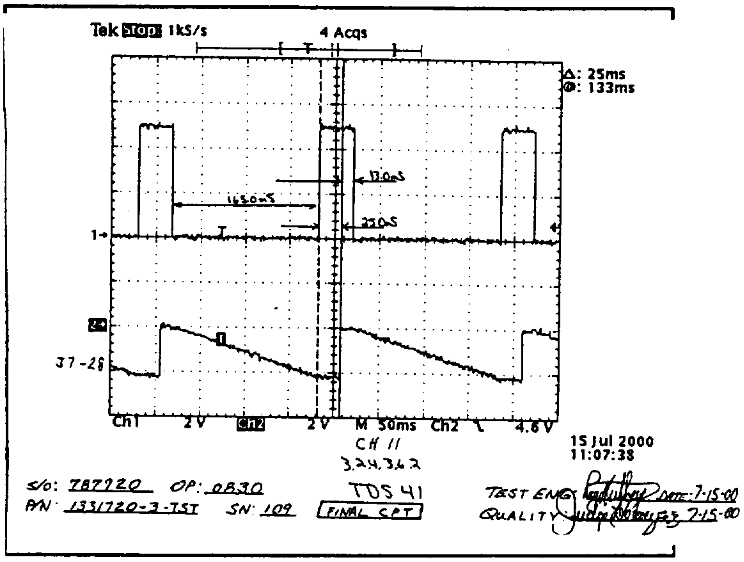


15 Jul 2000
11:06:28

CH 10
3,24,362

S/O: 787920 OP: 0830 TDS 40 TEST ENG: Ray [signature] DATE: 7-15-00
P/N: 131720-3-TST SN: 109 FINAL CPT QUALITY: [signature] 7-15-00

TEST DATA SHEET 41
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

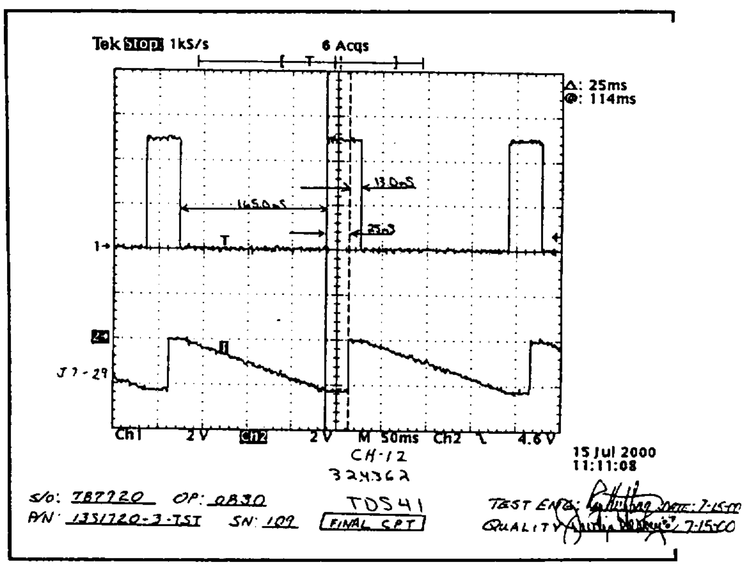


Channel ________11
Frequency: ____________57.3903 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS



Channel ________12
Frequency: ____________57.3903 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS

* Refer to Figure 2 for waveform configuration.

Circle Test: Final CPT LPT

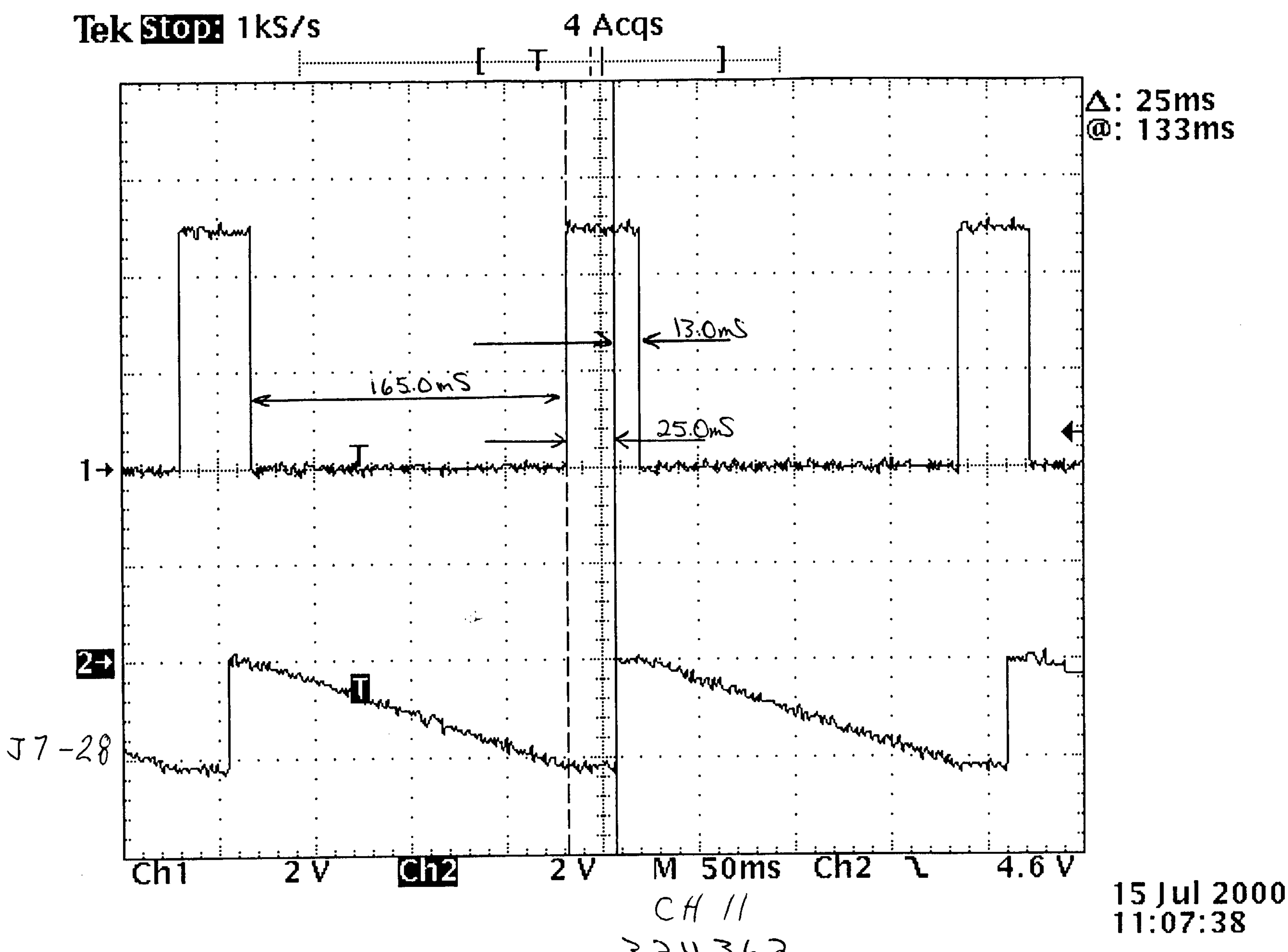
Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N 109

Test Systems Engineer _______ Date 7-15-00

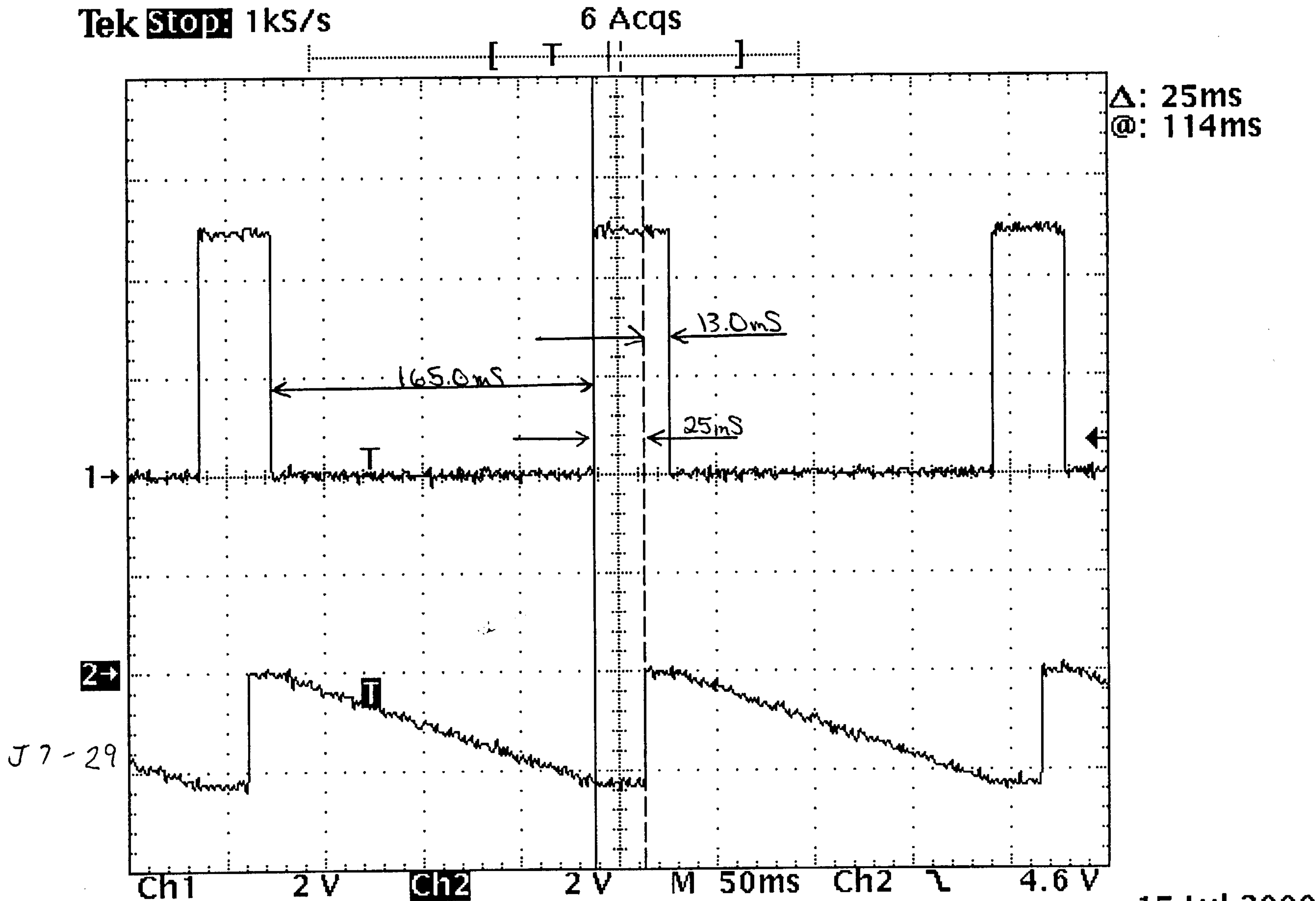
Customer Representative (Flight Hardware Only) _______ Date 7-15-00

Quality Control _______ QA 269 Date 7-15-00



S/O: 787920 OP: 0830 TDS 41 TEST ENG [signature] DATE: 7-15-00

P/N: 133720-3-TST SN: 109 FINAL CPT QUALITY [signature] 7-15-00



15 Jul 2000
11:11:08

CH-12
3.24.362

S/O: 787920 OP: 0830 TDS41

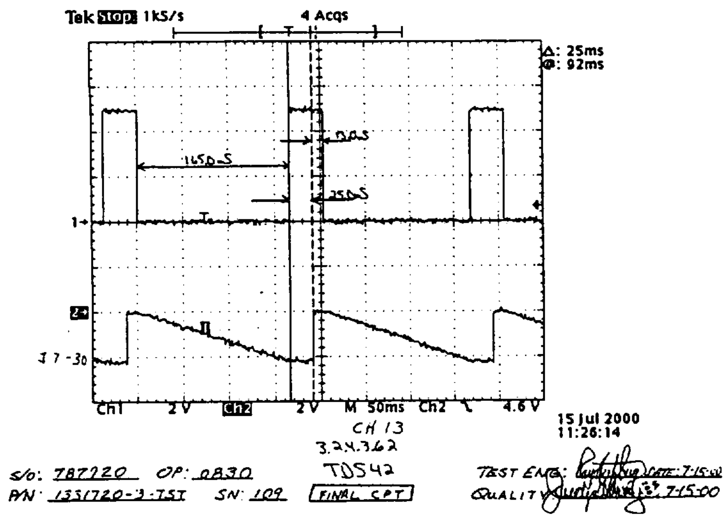
P/N: 133720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY [signature] 7-15-00

TEST DATA SHEET 42

Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)

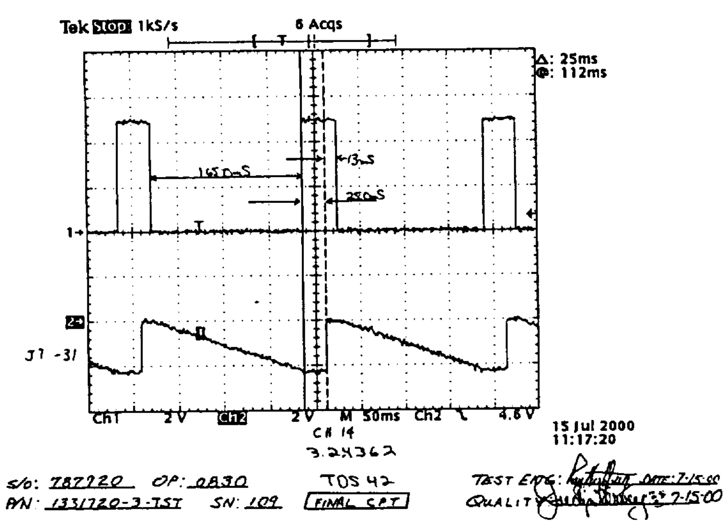


Channel 13
Frequency: 57.3903 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS



Channel 14
Frequency: 57.3903 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 25.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 13.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS

* Refer to Figure 2 for waveform configuration.

Circle Test: Final CPT LPT

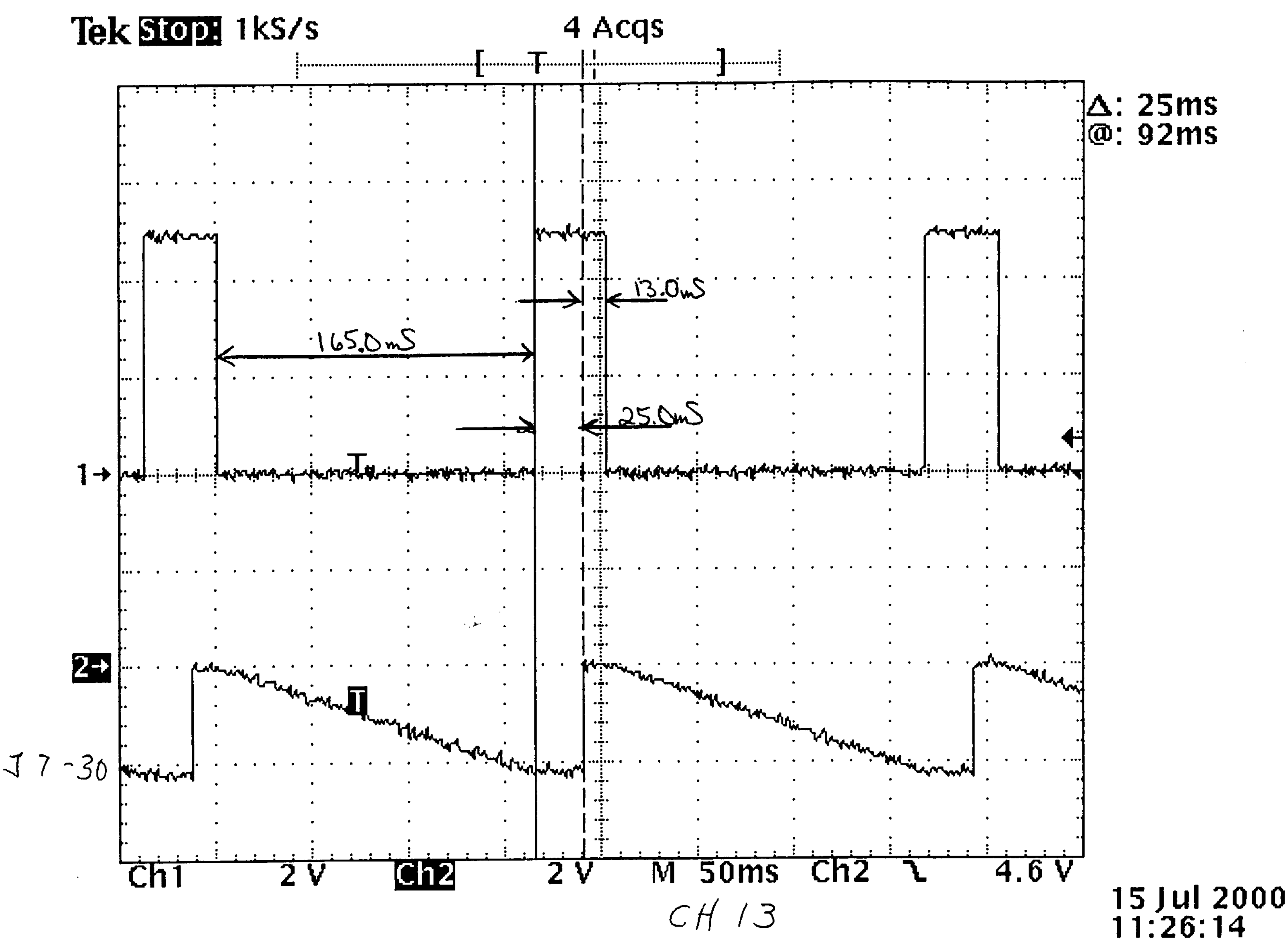
Op 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Ray Hertzberg 7-15-00
Test Systems Engineer Date

J. Sanford 7-15-00
Customer Representative Date
(Flight Hardware Only)

Judie Harvey 7-15-00
Quality Control Date

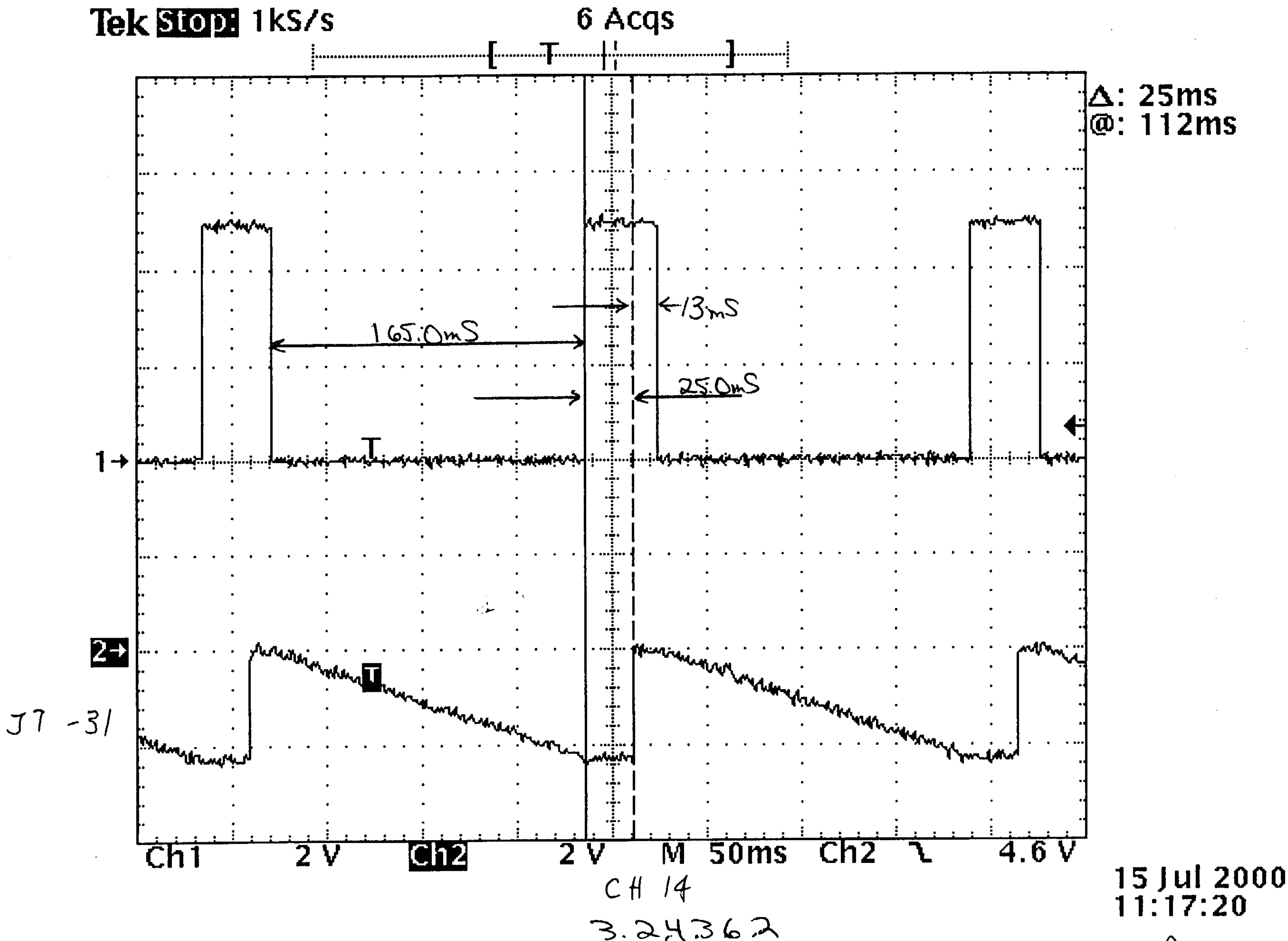


CH 13
3,2,4,3,6,2
TDS42

S/O: 787920 OP: 0830
P/N: 1331720-3-TST SN: 109

FINAL CPT

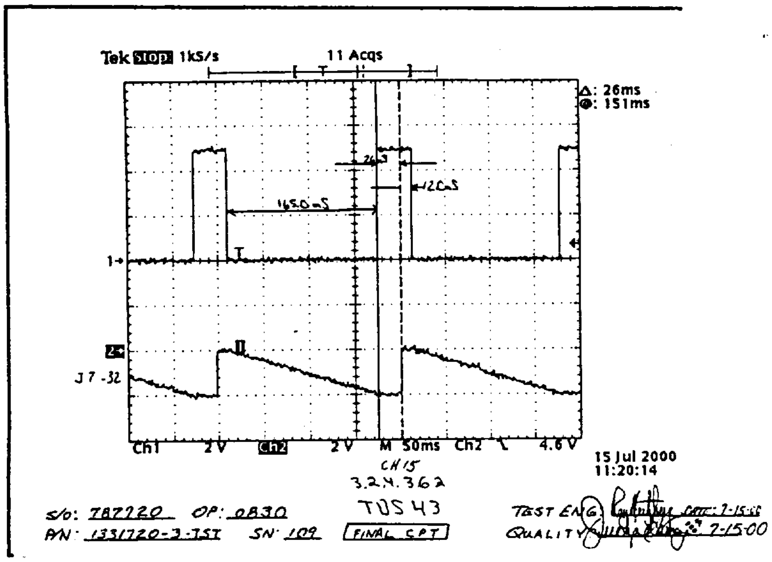
TEST ENG: [signature] DATE: 7-15-00
QUALITY [signature] 7-15-00



S/O: 787920 OP: 0830 TDS 42 TEST ENG: DATE: 7-15-00

P/N: 133772O-3-TST SN: 109 FINAL CPT QUALITY: 7-15-00

TEST DATA SHEET 43
Integration Time (Analog Output) Verification (Paragraph 3.2.4.3.6.2)



Channel 15
Frequency: 89 GHz

INTEGRATION (X) *
Measured 165.0 ms
Required 165 ms ± 10%
Pass/Fail PASS

HOLD (B-D) *
Measured 26.0 ms
Required 25 ms ± 10%
Pass/Fail PASS

DUMP (D) *
Measured 12.0 ms
Required 9 ms to 15 ms
Pass/Fail PASS

* Refer to Figure 2 for waveform configuration.

Circle Test: Final CPT LPT

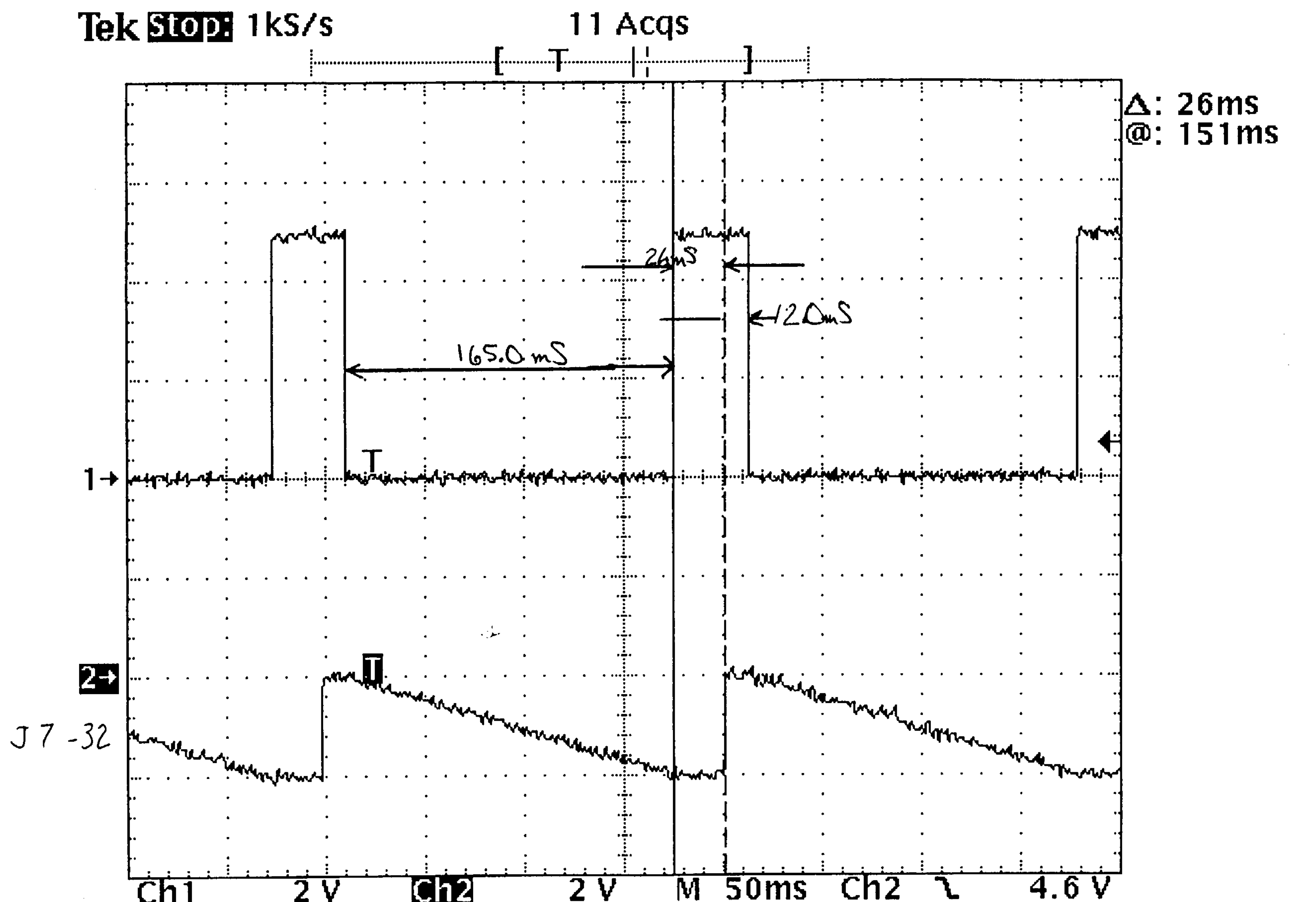
Op 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 7-15-00 Date



15 Jul 2000
11:20:14

CH15
3.2.4.3.6.2

TDS 43

S/O: 787920 OP: 0830

P/N: 131720-3-TST SN: 109 FINAL CPT

TEST ENG: [signature] DATE: 7-15-00

QUALITY: [signature] 7-15-00

TEST DATA SHEET 44
PLLO No. 1 Verification (Paragraph 3.2.4.3.6.3)
PLLO No. 2 Verification (Paragraph 3.2.4.3.6.4)

PLLO NO. 1

PLLO No. 1 dc Level 4.48 V Required: * Pass/Fail PASS

PLLO NO. 2

PLLO No. 2 dc Level 4.48 V Required: * Pass/Fail PASS

* -15 to +15 V dc level for S/N 101 - S/N 104, 4.0 ±1.0 V for S/N 105 and above.

Circle Test: Final CPT LPT

Op. 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

Test Systems Engineer 7-15-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 7-15-00 Date

TEST DATA SHEET 49
Receiver Input Signals (Paragraph 3.2.4.4.1)

CH 9 through 14 PLLO	PRT Temp (°C)		Measured * Frequency	Requirements **	Pass/ Fail
PLLO No. 1	PLO No. 1	Xtal *** Osc.			
	35.76 °C		57.29034064GHz	57290.334 MHz ± 50 kHz	Pass
PLLO No. 2	PLO No. 2	Xtal *** Osc.			
	32.84 °C		57.29034064GHz	57290.334 MHz ± 50 kHz	Pass

* Attach spectrum analyzer plots.
** = At 18°C
*** PRT not connected on S/N 105 and above.

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

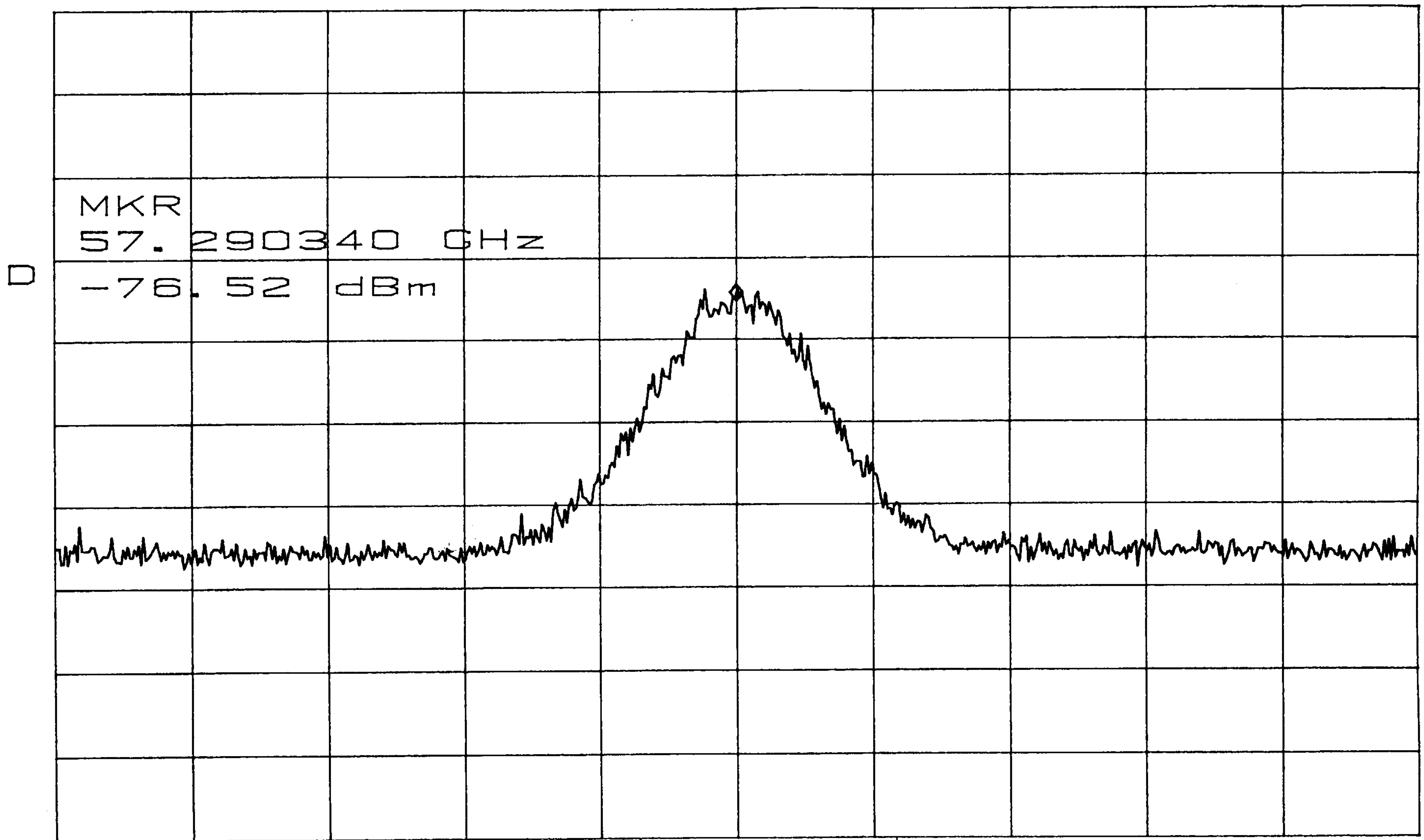
Test Systems Engineer 7-17-00 Date

Customer Representative (Flight Hardware Only) 7-15-00 Date

Quality Control 7-18-00 Date

CL 30.0dB
RL -73.0dBm 1dB/

MKR -76.52dBm
57.290340GHz



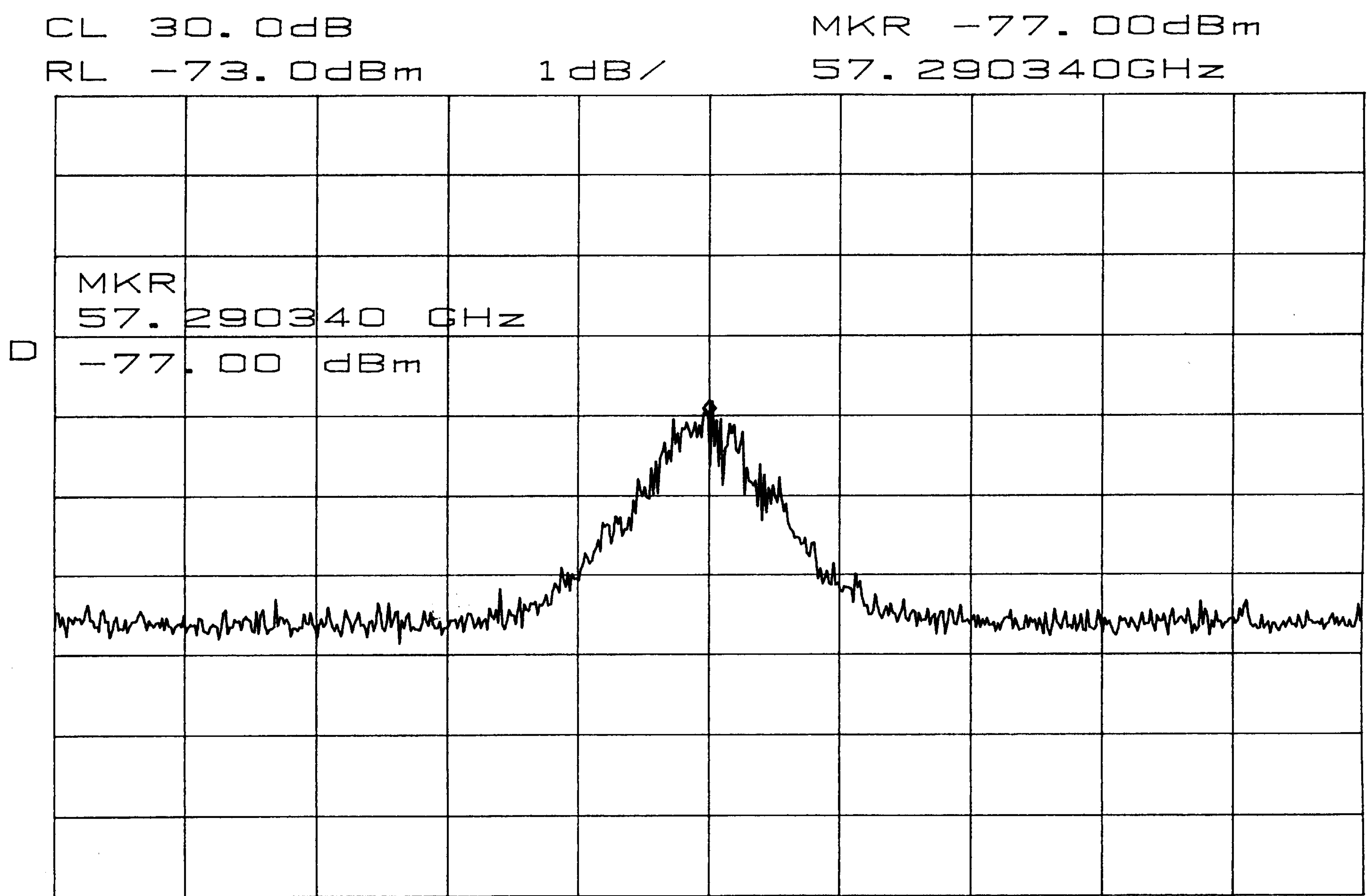
3.2.4.4.1 PLLO # 1

CENTER 57.290340GHz SPAN 2.000MHz

TDS 49

S/O: ~~787820~~ RBW 300Hz OP: 0830 *VBW 300Hz TEST EMP: Ray Burberg 7-17-00 SWP 1.00sec

P/N: 131720-3-TST SN: 109 FINAL CPT QUALITY: Judie Herrey 7-18-00



3.2.4.4.1 PLLO#2

CENTER 57.290340GHz SPAN 2.000MHz

TDS-49

S/O: 787920 *RBW 300Hz OP: 0830 *VBW 300Hz TEST ENG: Ray Kutzberg 7-17-00 SWP 1.00sec

P/N: 1331720-3-TST SN: 109 FINAL CPT QUALITY: Judi Harvey 7-18-00

TEST DATA SHEET 50 (Sheet 1 of 2)
Radiometer "Relative" NEΔT Verification* (Paragraph 3.2.4.4.2.2)

Channels 3, 4, 5, 6, 7, 8, and 15. PLLO No. 1 (Channels 9 through 14)

Channel Number>	3	4	5	6
NEΔT (Average of 5 data)	.264	.164	.167	.133
Pass/Fail	Pass	Pass	Pass	Pass
NEΔT (Specified) K **	0.40	0.25	0.25	0.25
Channel Number>	7	8	9	10
NEΔT (Average of 5 data)	.151	.225	.173	.208
Pass/Fail	Pass	Pass	Pass	Pass
NEΔT (Specified) K **	0.25	0.25	0.25	0.40
Channel Number>	11	12	13	14
NEΔT (Average of 5 data)	.259	.306	.467	.810
Pass/Fail	Pass	Pass	Pass	Pass
NEΔT (Specified) K **	0.40	0.60	0.80	1.20
Channel Number>	15			
NEΔT (Average of 5 data)	.138			
Pass/Fail	Pass			
NEΔT (Specified) K **	0.50			

* Baseline data for acceptance tests. Use first CPT or first LPT data along with specification value for pass/fail criteria
** For reference only

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 787920 S/N: 109

[signature] 7-18-00
Test Systems Engineer Date

[signature] 7-18-00
Customer Representative (Flight Hardware Only) Date

[signature] 7-18-00
Quality Control Date

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:02:44

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	295.96	16748.0	14127.0	0.082	0.218
4	295.96	16485.0	13755.0	0.079	0.144
5	295.96	16973.0	14042.0	0.074	0.173
6	295.61	16905.0	13807.0	0.070	0.136
7	295.61	16616.0	13922.0	0.080	0.137
8	295.96	15222.0	13071.0	0.100	0.261
9	295.61	16486.0	13638.0	0.076	0.193
10	295.61	16236.0	13448.0	0.077	0.199
11	295.61	16730.0	13893.0	0.076	0.269
12	295.61	17157.0	14205.0	0.073	0.361
13	295.61	16932.0	13592.0	0.065	0.513
14	295.61	17488.0	14413.0	0.070	0.891
15	295.61	15088.0	13559.0	0.141	0.138

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

PLLO # 1

Run # 1

	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12	CH13	CH14	CH15		
Run # 1	.218	.144	.173	.136	.137	.261	.193	.199	.267	.361	.513	.891	.138		
Run # 2	.294	.178	.152	.131	.158	.204	.164	.213	.255	.316	.460	.729	.155		
Run # 3	.301	.167	.182	.130	.148	.224	.172	.205	.245	.343	.482	.818	.140		
Run # 4	.265	.168	.166	.135	.139	.204	.161	.211	.258	.315	.476	.818	.136		
Run # 5	.242	.162	.164	.131	.171	.230	.174	.210	.271	.350	.405	.796	.119		
SUM / 5	1.32/5	.819/5	.837/5	.663/5	.753/5	1.123/5	.864/5	1.038/5	1.298/5	1.529/5	2.336/5	4.052/5	6.88/5		
AVE	.264	.164	.167	.133	.151	.225	.173	.208	.259	.306	.467	.810	.138		

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:04:36

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	295.98	16751.0	14159.0	0.083	0.294
4	295.98	16475.0	13776.0	0.080	0.178
5	295.98	16967.0	14067.0	0.074	0.152
6	295.62	16900.0	13766.0	0.069	0.131
7	295.62	16610.0	13884.0	0.079	0.158
8	295.98	15212.0	13087.0	0.102	0.204
9	295.62	16482.0	13607.0	0.075	0.164
10	295.62	16231.0	13414.0	0.077	0.213
11	295.62	16718.0	13856.0	0.075	0.255
12	295.62	17145.0	14164.0	0.072	0.316
13	295.62	16920.0	13548.0	0.064	0.460
14	295.62	17472.0	14369.0	0.069	0.729
15	295.62	15081.0	13530.0	0.139	0.155

PLLO #1

Run # 2

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:05:48

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.00	16749.0	14170.0	0.084	0.301
4	296.00	16469.0	13784.0	0.080	0.167
5	296.00	16964.0	14076.0	0.075	0.182
6	295.62	16896.0	13754.0	0.069	0.130
7	295.62	16608.0	13873.0	0.079	0.148
8	296.00	15206.0	13091.0	0.102	0.224
9	295.62	16480.0	13598.0	0.075	0.172
10	295.62	16227.0	13404.0	0.076	0.205
11	295.62	16711.0	13842.0	0.075	0.245
12	295.62	17137.0	14151.0	0.072	0.343
13	295.62	16911.0	13533.0	0.064	0.482
14	295.62	17459.0	14353.0	0.069	0.818
15	295.62	15077.0	13519.0	0.138	0.140

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

PLLO # 1
Run # 3

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:06:44

PLLO #1

Run #4

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.00	16751.0	14187.0	0.084	0.265
4	296.00	16465.0	13797.0	0.081	0.168
5	296.00	16962.0	14089.0	0.075	0.166
6	295.62	16894.0	13746.0	0.068	0.135
7	295.62	16606.0	13866.0	0.079	0.139
8	296.00	15203.0	13100.0	0.103	0.204
9	295.62	16478.0	13592.0	0.075	0.161
10	295.62	16225.0	13398.0	0.076	0.211
11	295.62	16704.0	13832.0	0.075	0.258
12	295.62	17131.0	14142.0	0.072	0.315
13	295.62	16905.0	13523.0	0.064	0.476
14	295.62	17450.0	14340.0	0.069	0.818
15	295.62	15074.0	13511.0	0.138	0.136

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:07:56

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.02	16749.0	14204.0	0.085	0.242
4	296.02	16459.0	13811.0	0.082	0.162
5	296.02	16958.0	14103.0	0.076	0.164
6	295.63	16891.0	13729.0	0.068	0.131
7	295.63	16602.0	13851.0	0.078	0.171
8	296.02	15197.0	13109.0	0.103	0.230
9	295.63	16477.0	13581.0	0.074	0.174
10	295.63	16221.0	13385.0	0.076	0.210
11	295.63	16696.0	13816.0	0.075	0.271
12	295.63	17124.0	14124.0	0.072	0.350
13	295.63	16898.0	13505.0	0.064	0.405
14	295.63	17442.0	14319.0	0.069	0.796
15	295.63	15070.0	13500.0	0.137	0.119

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

PLLO #1

Run #5

TEST DATA SHEET 50 (Sheet 2 of 2)
Radiometer "Relative" NEΔT Verification* (Paragraph 3.2.4.4.2.2)

PLLO No. 2 (Channels 9 through 14)

Channel Number>	9	10	11	12
NEΔT (Average of 5 data)	.168	.219	.245	.325
Pass/Fail	Pass	Pass	Pass	Pass
NEΔT (Specified) K **	0.25	0.40	0.40	0.60
Channel Number>	13	14		
NEΔT (Average of 5 data)	.455	.734		
Pass/Fail	Pass	Pass		
NEΔT (Specified) K **	0.80	1.20		

* Baseline data for acceptance tests. Use first CPT or first LPT data along with specification value for pass/fail criteria
** For reference only

Circle Test: Final CPT LPT

OP: 0830

METSAT/AMSU-A1 System P/N IS-1331720 Shop Order: 767928 S/N: 109

Test Systems Engineer 7-18-00 Date

Customer Representative (Flight Hardware Only) 7-18-00 Date

Quality Control 7-18-00 Date

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:38:20

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.80	16773.0	16762.0	1.000	3.383
4	296.80	16355.0	16342.0	1.000	2.084
5	296.80	16895.0	16881.0	1.000	1.977
6	295.56	16837.0	13804.0	0.071	0.145
7	295.56	16548.0	13910.0	0.082	0.140
8	296.80	15074.0	15063.0	1.000	2.217
9	295.56	16405.0	13615.0	0.077	0.166
10	295.56	16150.0	13423.0	0.079	0.197
11	295.56	16547.0	13799.0	0.078	0.216
12	295.56	16973.0	14111.0	0.075	0.297
13	295.56	16746.0	13506.0	0.067	0.480
14	295.56	17237.0	14274.0	0.073	0.701
15	295.56	15006.0	13519.0	0.145	0.186

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

PLLO#2
R
Run # 1

	CH 9	CH10	CH11	CH12	CH13	CH14
Run # 1	.166	.197	.216	.297	.480	.701
Run # 2	.154	.233	.263	.315	.417	.742
Run # 3	.175	.219	.234	.304	.497	.786
Run # 4	.166	.207	.252	.352	.421	.679
Run # 5	.180	.239	.260	.358	.462	.765
sum / 5	.841	1.095	1.225	1.626	2.277	3.673
AVE	.1682	.219	.245	.3252	.4554	.7346

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:39:24

PLLO #2

Run # 2

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.83	16773.0	16764.0	1.000	3.006
4	296.83	16351.0	16338.0	1.000	2.112
5	296.83	16893.0	16879.0	1.000	2.275
6	295.56	16834.0	13791.0	0.071	0.159
7	295.56	16546.0	13899.0	0.081	0.166
8	296.83	15068.0	15057.0	1.000	2.392
9	295.56	16401.0	13603.0	0.077	0.154
10	295.56	16146.0	13410.0	0.079	0.233
11	295.56	16542.0	13786.0	0.078	0.263
12	295.56	16968.0	14096.0	0.075	0.315
13	295.56	16743.0	13488.0	0.066	0.417
14	295.56	17232.0	14255.0	0.072	0.742
15	295.56	15004.0	13506.0	0.144	0.153

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:40:28

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.87	16774.0	16761.0	1.000	3.356
4	296.87	16348.0	16334.0	1.000	1.815
5	296.87	16892.0	16878.0	1.000	1.987
6	295.56	16833.0	13797.0	0.071	0.155
7	295.56	16545.0	13903.0	0.082	0.162
8	296.87	15065.0	15053.0	1.000	2.253
9	295.56	16398.0	13606.0	0.077	0.175
10	295.56	16144.0	13412.0	0.079	0.219
11	295.56	16537.0	13787.0	0.078	0.234
12	295.56	16964.0	14098.0	0.075	0.304
13	295.56	16736.0	13490.0	0.066	0.497
14	295.56	17225.0	14257.0	0.073	0.786
15	295.56	15002.0	13507.0	0.144	0.160

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 1

PLLO # 2
Run # 3

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:41:32

PLLO #2

Run #4

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.91	16774.0	16761.0	1.000	3.157
4	296.91	16344.0	16331.0	1.000	2.270
5	296.91	16892.0	16877.0	1.000	1.908
6	295.56	16832.0	13799.0	0.071	0.136
7	295.56	16543.0	13904.0	0.082	0.163
8	296.91	15062.0	15051.0	1.000	2.227
9	295.56	16398.0	13607.0	0.077	0.166
10	295.56	16141.0	13412.0	0.079	0.207
11	295.56	16533.0	13786.0	0.078	0.252
12	295.56	16959.0	14097.0	0.075	0.352
13	295.56	16731.0	13491.0	0.067	0.421
14	295.56	17218.0	14257.0	0.073	0.679
15	295.56	15000.0	13505.0	0.144	0.148

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 2

A1 FUNCTIONAL TEST RESULTS
A1.EXE;62 18-JUL-00 08:43:00

PLLO #2
Run # 5

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
3	296.95	16773.0	16760.0	1.000	3.690
4	296.95	16341.0	16325.0	1.000	1.710
5	296.95	16888.0	16872.0	1.000	2.413
6	295.56	16829.0	13798.0	0.071	0.136
7	295.56	16541.0	13903.0	0.082	0.142
8	296.95	15058.0	15045.0	1.000	2.236
9	295.56	16393.0	13604.0	0.077	0.180
10	295.56	16138.0	13409.0	0.079	0.239
11	295.56	16526.0	13782.0	0.079	0.260
12	295.56	16952.0	14093.0	0.075	0.358
13	295.56	16724.0	13487.0	0.067	0.462
14	295.56	17210.0	14252.0	0.073	0.765
15	295.56	14997.0	13501.0	0.144	0.181

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]
SELECT TOUCHSCREEN BUTTON 1

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Report Documentation Page

1. Report No. ---	2. Government Accession No. ---	3. Recipient's Catalog No. ---
4. Title and Subtitle Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Performance Verification Report		5. Report Date July 2000
		6. Performing Organization Code ---
7. Author(s) R. Haigh		8. Performing Organization Report No. 11669
		10. Work Unit No. ---
9. Performing Organization Name and Address Aerojet 1100 W. Hollyvale Azusa, CA 91702		11. Contract or Grant No. NAS 5-32314
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15. Supplementary Notes ---		

16. ABSTRACT (*Maximum 200 words*)

This is the Performance Verification Report, Final Comprehensive Performance Test Report, P?N 1331720-3-TST, S/N 109/A1, for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).

17. Key Words (Suggested by Author(s)) EOS Microwave System		18. Distribution Statement Unclassified --- Unlimited	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of pages	22. Price ---

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4. TITLE AND SUBTITLE	5. FUNDING NUMBERS
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6. AUTHOR(S) B. Delgado-Barger	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Aerojet 1100 W. Hollyvale Azusa, CA 91702	8. PERFORMING ORGANIZATION REPORT NUMBER 11669 July 2000
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11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT	12b. DISTRIBUTION CODE
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13. ABSTRACT (*Maximum 200 words*)

This is the Performance Verification Report, Final Comprehensive Performance Test Report, P?N 1331720-3-TST, S/N 109/A1, for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).

14. SUBJECT TERMS	15. NUMBER OF PAGES
EOS Microwave System	16. PRICE CODE ---

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
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